

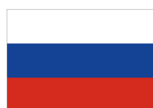
# The Cookbook of Successful Short-Term Events

Organization And Continued Development Of Outcomes  
Through An Iterative Process

THE COPERNICUS EARTH OBSERVATION PROGRAM  
AND THE BALTIC SEA REGION WORKING CONTEXT



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This publication has been authored by the following individuals

UNIVERSITY OF TURKU:

Johannes Holvitie (jjholv@utu.fi)	--" --	Dept. of Future Technologies
Mikko Jaakola (mjjaak@utu.fi)	--" --	
Tuisku Polvinen (tumipo@utu.fi)	--" --	
Niina Käyhkö (nivuore@utu.fi)		Dept. of Geography and Geology
Carlos Gonzales Inca (cagoin@utu.fi)	--" --	

CRACOW UNIVERSITY OF TECHNOLOGY

Paweł Kisielewicz (pkisiele@pk.edu.pl)		Dept. of Computer Science
Daniel Grzonka (dgrzonka@pk.edu.pl)		--" --
Adrian Widłak (adrian.widlak@pk.edu.pl)	--" --	
Piotr Szuster (piotr.szuster@pk.edu.pl)	--" --	
Joanna Kołodziej (jokolodziej@pk.edu.pl)	--" --	
Dominika Głowczyk (glowczyk@transfer.edu.pl)		Center for Technology Transfer

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INSTITUTE OF GEODESaY AND CARTOGRAPHY  
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Since 2014, the satellites of the European Copernicus programme have delivered Earth observation data free of charge to anyone. The wealth of data holds tremendous potential for new services in the environmental, transport, energy and other sectors.

BalticSatApps (10/2017–3/2021) increased awareness about the data provided by the Copernicus programme, improved access to the data, and stimulated demand and innovation through co-creative and iterative development methodologies. The project also developed an acceleration programme focusing on Earth observation business.

The total budget of the BalticSatApps project was EUR 2.8 million, of which the support from the European Regional Development Fund amounted to EUR 1.8 million and European Neighbourhood Instrument (financial support received from the Russian Federation) to EUR 0.4 million.

# Contents

<b>Introduction</b>	<b>4</b>
Short-term events	6
<b>Pre-event</b>	<b>10</b>
Feasibility iteration on the event topic	10
Open source and other forms of data access	12
Outlining the event goals	14
Identifying the event target groups	16
Facilitators and other staff members	19
Promoting the event	21
Sponsors, awards and extra services	24
Registration	26
Logistics, location, and practicalities	31
Planning the event timetable	35
Ensuring success with pre-event preparations	38
<b>During the event</b>	<b>46</b>
Participants and their roles	46
Evaluation criteria	48
<b>After the event</b>	<b>50</b>
Solution follow-up	50
Participant follow-up	54
Event follow-up	55
<b>Appendices</b>	<b>60</b>
References	60
Schedules	62
Posters	62
Miscellaneous products	62
ID badges	62
Webpages and social media	70

# 1. Introduction

Stimulating innovation is one of the most critical challenges of the broader economy. In recent years, events that activate people from various fields to develop innovative solutions or to familiarize themselves with the latest technologies have been very popular. We can also observe that there is a growing demand for geospatial data and tools, which offer location-specific innovation solutions. Particularly those innovations utilizing satellite-based Earth observation (EO) data, since these allow near real time mapping and monitoring of the dynamic phenomena on the Earth. Having wider and open access to up-to-date information is a catalyst for solving real-world problems and creating new solutions for informed decision-making and thus also expanding opportunities in the data-driven economy.

Open access to location-specific data, particularly satellite images offered by the public organizations such as United States Geological Survey (USGS), National Aeronautics and Space Administration (NASA), and European Space Agency (ESA) have increased dramatically over the last decades. These open-access Earth observation data catalogues, combined with better access to cloud-based computing resources, and novel data collections such as citizen-science data have diversified the overall knowledge base for innovation developments all over the world. Satellite data, with regular, repeated observations of the status of our living environment are prominent and still relatively less used data in various innovation solutions, especially when the solutions are outside of the typical EO domain, such as mapping of natural resources or land uses. There is a clear need to promote better understanding of the nature of the satellite data and what opportunities it offers to the whole digital data driven innovation scene in Europe and globally.

Prominent solutions are often abandoned because of lack of support from business support organizations. On one hand there is a need to increase the survival rates of valuable ideas by providing guidance and mentoring to their developers, and on the other hand there is a need to convince Business Support Organizations, Technology Parks, Academic Incubators, private accelerators and research universities to pay more attention to EO-derived solutions, and to arrange the mentoring and incubation opportunities for these kinds of emerging technologies.

Various kinds of short-term events, such as hackathons, workshops or info



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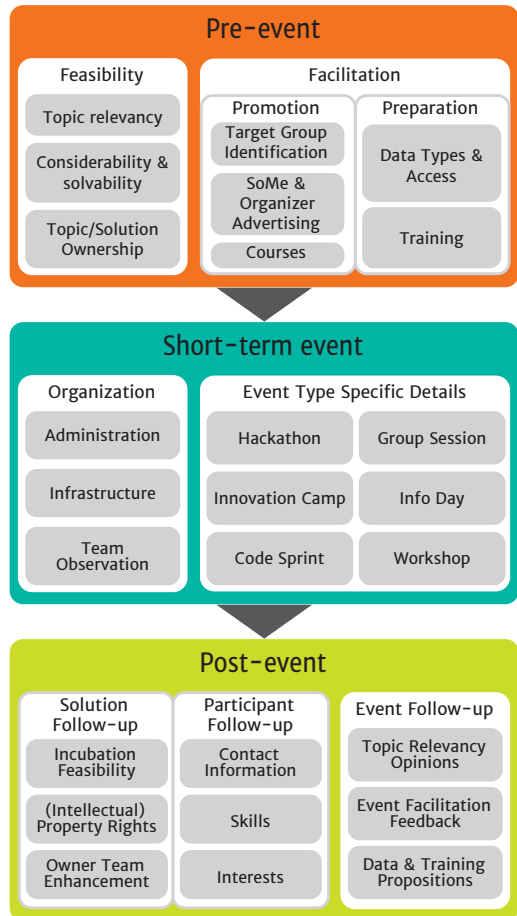


days can be efficient tools for contacting potential partners. This document is a collection of our experience acquired during the organization of these events. They were organized within the framework of the BalticSatApps project (#R036), which aims to help multiple sides get better results from the open European Copernicus Programme data.<sup>1</sup>

The cookbook focuses on the iterative development process wherein ideas and needs are systematically combined with skilled solution area experts and enthusiastic developers who are equipped with fitting tools and data. The outcomes of these combinations are analysed and it is identified if and how reapplying the previous (i.e. iterating) can bring the outcome closer to an effective and self-sustained innovation.

The ideas are converted into innovations by iterating aforescribed expertise in various events. This publication discusses matters that need to be taken into account prior to the events, the types of events themselves, and issues that need to be considered afterwards. Sections refer to one another in order to highlight iterative dependencies and possibilities.

Wherein possible, adjustments to event organizations are discussed to best fit them for speeding up Copernicus-based innovation in the Baltic Sea Region. Empirical observations serve as examples of their applications.



1 <https://www.copernicus.eu/>

## 1.1. Short-term events

### What is a short-term event?

A short-term event is an event that takes place during a relatively short period of time, ranging from half a day to usually a week at most. There are many different types of short-term events, some better suited for a particular kind of challenge, some having a broader scope. In this chapter we list common short-term event types, and give a brief introduction about the basic idea of the type as well as the types of challenges it is most applicable to.

**Hackathon** Rosell, Kumar, and Shepherd define hackathon as an event where people come together to collaboratively build and launch a new application or finished good, aimed at solving a particular problem built on top of new or existing technology.<sup>2</sup> Participants usually work in small teams of up to five people over a time period of a day or two, with the goal of generating a working prototype at the end of the event.

In recent years, we have observed a significant popularisation of this type of events. Participants can test their skills in unconventional thinking, working in a group and under the time pressure, as well as hone soft skills related to presenting their solutions to potential investors. In addition to possible material gains in the form of prizes, the integration of the business and academic environments brings possibilities for networking and as whole the events provide valuable experience that can result in a great entry in a CV.

From the point of view of merging opportunities of citizen-science with Earth observation data, **Mapathon** events are particularly prominent. Mapathons are usually organized for volunteered mapping of missing geospatial data based on visual interpretation of high-resolution satellite data sets, which are accessible globally through OpenStreetMap (OSM) service, as well as from commercial platforms offered by Google and Bing, for example. OSM is a global community, which maintains open access to geospatial data collected throughout the world and offers web map service and repository of free geospatial data of basic Earth infrastructures and services. Mapathon campaigns, organized regularly by various NGOs and public organizations often bring an entirely new viewpoint into the data and can easily result in innovative new earth observation data creation processes by the communities

<sup>2</sup> Rosell, Bard & Kumar, Shiven & Shepherd, John. (2014). Unleashing innovation through internal hackathons. 1-8. 10.1109/InnoTek.2014.6877369

themselves. Mapathons are important in sensitization of the crowd with earth observation data and opportunities of creating new data based on local interpretation. Mapathons also facilitate youth digital skills training and awareness of satellite data, and thus work quite well as pre-events to larger hackathons or other short term events.

**Data camp**<sup>3</sup> While hackathons most commonly last one or two days, a week-long hackathon would fall in the subcategory of a data camp. Enabled by the length of the event, data camps might feature additional teambuilding or other complementary elements.

**Innovation Camp**<sup>4</sup> As a derivative of hackathon, the innovation camp attempts to produce an innovation. By definition innovation is a novel need, service, solution, or other socio-technical mechanism which can not be directly mapped to any existing concept in the context-under-examination. While the team and time period structures are similar to hackathons or data camps, the technology enabler has a lower role or is completely missing, as the innovation is often a much more abstract end-result; a description of a socio-technical mechanism. Innovation camps also often emphasize assembling cross-curricular teams in order to promote interdisciplinary brewing of ideas.

**Group Session** The group session is a rather self-explanatory event type. It is any structured gathering of select participants that work on a certain context or topic to pursue a particular end result. As the name implies, this short term event is limited to a single, very short (few hours to a day) time period. Nevertheless, the group session is expected to yield tangible end results after execution.

**Code sprint** A code sprint is a dedicated session of a hackathon (or individual event) in which a group of participants (programmers, database specialist, designers, testers, documentation writers etc.) work together rapidly on a project (or a small number of projects). What code sprints from other hackathons, is that they are usually not competitive and that instead of creating from scratch, the focus is on existing software. The main goal of a code sprint is to improve the software adding functionalities, fixing bugs, writing tests, improving documentation, or doing any other things in the context of the project. A sprint usually uses ExtremeProgramming methods, such as programming in pairs or doing extensive code review, unit testing of all code. It allows developers from different communities to work together and learn from each other.

**Workshop** When there is a need to concretize and or construct a clearer image from a set of initial topics or challenges, the workshop is an ideal tool. Generally, a training workshop is a facilitated group-based day-long activity. The workshop is started with an introduction which presents an overview of the subject matter from both the application and solution domains. The participants should also represent these two domains, and

3 Chounta & Manske (2017). "From Making to Learning": introducing Dev Camps as an educational paradigm for Re-inventing Project-based Learning

4 Malve-Ahlroth, Lankiniemi, Knuutila & Virta (2019). Innovation camp manual

organizers need to take this into account in enrolleé selection.

The workshop then continues with facilitated group activities, where the groups are organized so as to have both domains represented. Common practise is to present groups with rather short, preformatted topics or questions with an initial framework of the goal. If all groups are given the same topics, the facilitators can evoke competing interests and get more in depth analysis as results. If groups are given differing topics, the topics will be complementary and result in a broader analysis.

**Info Day** Info day is a mini-conference that aims to promote an event, project, service or other. Info day allows us to familiarize and pre-prepare potential participants before the planned event. It can also be an opportunity to promote event sponsors.

**Business Festival** It's best to learn from the mistakes ...of others. And from their rich experiences. Business Festivals give such an opportunity. They consist of lectures, workshops, meetings with businesspeople and inspiration sessions. The speakers are mainly people who have achieved professional success. A Business Festival is an event during which theory and practice are combined.

**Challenge** A challenge event is a limited time quest where all participants compete with each other. The success of each participant is measured by the obtained results (the quality of the developed solution) and the time needed to complete the task. Taking part in a challenge event gives an excellent opportunity to achieve personal goals.

### Why should you organise a short term event?

Organising short term events have been trending for some time, although there has been somewhat of a decrease in their prevalence in recent years. At the peak of the trend quantity might have sometimes exceeded quality, leading to an oversupply of hastily planned events, decreasing their appeal among students and young people. Well-planned events with compelling subjects may still gain a good amount of attendance and spawn more interest for future events.







Above: WeSeaChallenge pre-event

Below: Winning teams



## 2. Pre-event

This chapter covers the main aspects that should be taken into consideration when planning a short term event; topics, goals, target groups, marketing and practical arrangements to be conducted before the actual event.

### 2.1. Feasibility iteration on the event topic

When planning any event, it is good to stop and analyze the intended topic and what kind of an appeal it could have to any target audience, as well as the possibilities for the further development of solutions created in the event.

#### **Is the topic popular at the moment?**

Different topics are popular at different times, and there tends to be global trends as well as smaller, local ones. For example, subjects like global warming, sustainability and environmental issues are discussed all over the world and are especially hot topics among young people. A local topic could concern a specific area or be related to a local industry.

To determine if the subject of your planned event is feasible, you should do some background mapping to find out if the topic is popular at the moment, and among who. This gives you an idea of who would be the ideal participants in your hackathon.

#### **Is the topic universal or local?**

As previously mentioned, some topics are local and some are universal. Some local topics could have possibilities for more universal application with adjustments - for example, some topics and solutions concerning lakes and small waters might be applied to seas with small changes.



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## WeSeaChallenge, Turku

WeSeaChallenge was an open innovation competition organised by Turku Business Region, the University of Turku, and the Finnish Meteorological institute in the autumn of 2019. The aim of the competition was to find new ideas where satellite data is used together with other sources of information to support sustainable planning and monitoring of marine environments.

WeSeaChallenge focused on the Baltic Sea region. The Baltic Sea is one of the most polluted seas in the world, and it suffers from eutrophication, so new ideas are needed on how we can change this for the better. When we think about it we have to keep in mind that localized challenges usually aim at providing solutions raising from needs in a particular geographical area or context. Satellite data, which have global data coverage, enable scalability of the competition ideas, and set up to another area or applying good ideas within a larger focus area. Since the temporal reach of openly accessible global satellite data is well over 30 years, also challenges focused on dynamics and changes are applicable.

The competition had three challenge categories; Sustainable aquaculture, Sustainable urban planning, and clean, productive and shared Baltic Sea. The Sustainable aquaculture challenge was provided by Nordic Trout, a company that produces farmed edible fish in Finland, Sweden and Åland. In addition to providing us with the challenge for the competition, Nordic Trout also provided us valuable information about how important it is to establish partnership with companies, associations or a group of people looking for innovations to define certain challenges to be solved. The focus of sustainable aquaculture was to find more accurate information about fish farm establishments in an even more sustainable manner.

The sustainable urban planning focused on finding ways for sustainable use of coastal areas, which balances between economic, social and environmental goals. At a practical level this means land use planning processes and choosing the best locations for industry, leisure or living. This planning should be based on reliable and up-to-date information on the state of the water quality.

The clean, productive and shared Baltic Sea challenge was provided by Baltic Sea Challenge (BSC). BSC is a network initiative of the cities Turku and Helsinki that invites organisations to commit in protecting the Baltic Sea and their local waters, to building their own Baltic Sea Action Plan and implementing it. In 2019 there are already 300 member organisations in the BSC Network from the countries around the Baltic Sea. Five shared objectives of the network are: clear coastal waters, healthy marine habitat, clean and safe water traffic, systematic water area management and active Baltic Sea citizenship.

Since fish farming is happening all over the world, solutions for more sustainable fish farming can be adapted anywhere. People all over the world are moving from rural to urban areas, which has a huge impact on cities, especially in the coastal areas. More people means more space is needed to accommodate them and more commendations means more waste. This means that better urban planning has to be made so that the crowing number of people in the coastal areas doesn't burden the coastal waters more than they already do. This can be done with good urban planning which means good sewerage systems, waste management and regulating the agriculture to use fertilisers that doesn't eutrophicate the rivers and coastal waters.

The goal of the The Baltic Sea Challenge was and is today to find ways for effective communication of important areas and share it with decision makers, organizations, municipalities and the general public around the Baltic Sea. The knowledge of how we as people do more in the fight against pollution and eutrophicate in our water areas. The people should be educated on ways to do more for the environment and the decision makers should make decisions to support this and at the same time make decisions that lead us to decrease our burdening the water areas of the world.

As we can see from the challenges of WeSeaChallenge, even though their focus was on the Baltic Sea, the solutions can be used all over the world with little modification.

<https://balticsatapps.eu/weseachallenge/>

## 2.2. Open source and other forms of data access

At present, there is a huge amount of open data available. Depending on the event topic, using open data could be a good addition or even the main point of an event. Accessing open data can, depending on the data, be a bit tricky, but when you have obtained it it's free, and so it does not place burdens on the budget of the event and the money can be used elsewhere.

### Accessing open data

If the event uses specific open source data, like satellite data, accessing it without any previous experience can be difficult. Therefore it is recommended to instruct the participants how to access the data beforehand, so that the participants get to know how to access the data and get a picture of what it includes. This information can be covered by written instructions or videos that the participants study independently or by organizing joint training sessions. This might have a crucial effect on the outcome of the event, and must be taken into account while planning the event.

Access to the open data from the Sentinel satellites of the Copernicus programme is managed through several data portals. The data can be accessed through Data and Information Access Services (DIAS) or satellite data hubs like the Copernicus Open Access Hub or EUMETCast. BSA partner countries also have access hubs, like the Finnish Data Hub of the Finnish Meteorological

## Spectator Platform, Cracow

Spectator tracks Earth-Imaging satellites and provides tools for you to publish meaningful information based on their data. Spectator uses excellent satellite programs such as Copernicus Sentinels and USGS/NASA Landsat to access fresh satellite images daily. Get full monitoring information with satellite overpasses,

acquisition plans and archive data access. Then build your real-time application. They provide a website which delivers the satellite data from Landsat-8, Sentinel 2-A and Sentinel 2-B. Free access is based on easy to understand Graphical User Interface: <https://app.spectator.earth/>



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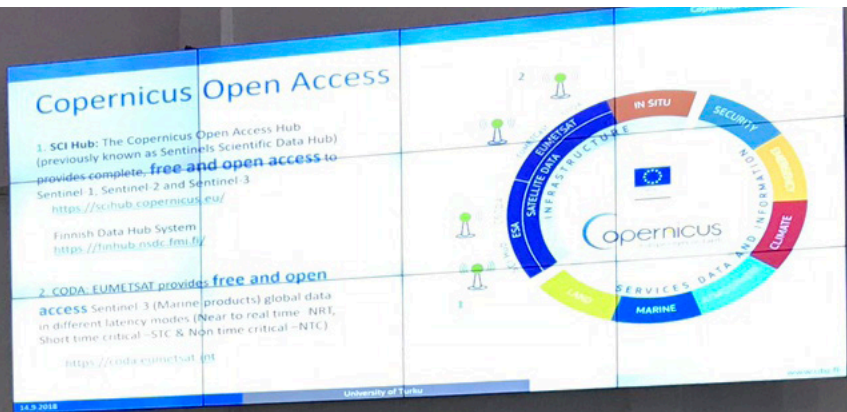
Institute<sup>5</sup> and interfaces like the integrated Copernicus and Russian satellite data interface<sup>6</sup>.

Open data portals usually have instructions on how to access and use the data, but preparing guides tailored for the needs of your specific event helps the participants to have a more efficient start to their work. The BalticSatApps project has prepared a Data to Information kit that is tailored to aid participants of BSA events in familiarizing themselves with satellite data usage.

### Protected data

If the material used comes from a partner or partners who are the sole providers of the data, it usually means that it can't be distributed to the participants beforehand as easily as open data. This might be because it is in some degree confidential or cannot for other security reasons be shared over the internet. If there could be some possibility to securely share the data with attendees beforehand, so that they would have time to familiarize themselves with it before the event, it could result in better ideas and solutions. This would be good to discuss with those who provide the data.

If the data used in the event comes from a closed or protected source, would it be useful to have additional open source data as complementary to the given data? For example, if the solutions are using data from drones, there is a possibility that satellite data could add some value to this data - even though they differ in resolutions, the satellite data could provide different kind of data over the same areas than the drone data, leading to a broader perspective and more data as a whole.



5 <https://nsdc.fmi.fi/data/sentinel>

6 <https://bsa.regionview.ru/>

## 2.3. Outlining the event goals

It is very important that all of the participants have a clear picture of the event objectives. Is the point of the event to think of new ways to solve certain challenges, or is it to create completed products, computer programs, phone apps, etc., or just to learn new things and have fun?

### Company-authored challenges

If the premise of the event is to solve one or more challenges given by a company participating in organising the event, the challenges are usually well thought out and formed.

**Transfer of solutions' (intellectual) property rights to companies** If the challenges come from a partner company, the solutions to these challenges are automatically owned by the company, which leads to the fact that there is no way for the teams to move forward with the solution without the approval of the company. This is not an ideal situation when thinking about the iterative development of ideas. It could also be something that might keep people from participating, because they feel they are just giving away their ideas, even if the event granted great prizes. So it would be best to avoid this kind of situation by any means.

**Agreed upon company property right forfeit** A solution to the problem discussed above. If the partner companies agree for the solutions to be used somewhere else, the team can proceed by themselves, or it is also possible for them to cooperate with some other company.

### Team-authored challenges

Create new innovations and possible new business ventures! If the idea is that the solutions created in the event will be cultivated to new innovations and possible new business ventures, you have to consider how to proceed with these solutions after the event. There is a lot to think about when creating new innovations and business ventures. If you don't have this knowledge within your partners, or their partners don't want to pursue the solutions towards a new business venture, you have to look for this elsewhere. Local business venture events and other similar events are good places to find new partners for further business development.



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Remember to check who owns the rights for the challenges and the solutions! It's important that the ownership of the rights to the solutions is clear to all participants since the beginning of the event. This way you avoid the situations where the people who came up with the solution should have the rights to whatever they want with the solution or deny anyone doing anything with it.

### **Up-for-grabs challenges**

Can the solutions be used by others then the original participants and partners for possible new business ventures? If neither the teams or the partner companies are interested in using the solutions for further development, allowing other teams or companies to take them over could be beneficial for their further development. This way the solutions won't go to waste, and they retain their possibilities of leading into new innovations and business ventures. It is a good idea to discuss these aspects with all the partners before the event.

## 2.4. Identifying the event target groups

### Attendees

It's very important that you have the right attendees present in your event so that you can have the best solutions and the best outcome. Some of the possible target groups include:

**Students.** As opposed to other groups, students often have the most flexible schedules and are more eager to plunge into using whole days for hacking events. Students have large knowledge about their major field of study, so if the event concerns a very specific subject, students who are in a relevant field are ideal participants. Additionally, students from other fields and specifications bring valuable cross-disciplinary knowledge, and attracting the attention of heterogeneous groups of students is desirable.

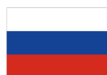
**Professionals.** If you're planning a short-term event around a special topic that requires advanced knowledge, and local universities either do not have students specializing in the selected field, or they would require extended training to be able to work the subject, you should ask yourself would it be easier to organize it with some corporations or organizations that already have the know-how, having their professionals participate.

Compared to students, professionals more often have full-time jobs and their own families, so they have more limitations as to how much time they might be able to allocate to events. If the corporation they work in is a partner in the event, negotiating for the possibility for work time to be used for the event enables the employees to better commit to the event.

**Mixed group of students and professionals.** If the topic is otherwise suitable for students but more complex than could be expected for them to tackle by themselves, it might be a good idea to bring in professionals of the field in question to complement the student groups. This would ideally provide the students with reliable hands-on knowledge of the topic and up-to-date understanding of the field.



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**Specifically selected groups of participants** If the event topic and challenges are very strict, it might be a good idea to restrict the participants to a small group of specific people to solve these challenges. This concerns topics on the field of e.g. medicine or surgery, where the knowledge of the field is in the hands of the people who have studied the field and work in it.

### **Organizational partners**

Having partners is always a good idea. They can be of great help when arranging the basic stuff - where, when and how to organize the event. Partnering universities or companies can provide their premises as event locations and participate in the logistics, for example. Sharing the load of organizing helps you to focus on other things like where and how to get the right participants. Partners could also provide you with judges or mentors for the event, and possibly prizes for the winning participants.

**Sponsors** Having sponsors can greatly broaden the range of possibilities when holding an event. Unfortunately, successfully obtaining them is not guaranteed. It's a good idea to contact companies as well as both public sector and non-profit organisations that work in a field concerning the event topic. If possible, the ideal first sponsors for the event would be your organizational partners or organizations already involved in the event in the form of topic owners.

## **ESA BIC Space Hack 2018, Helsinki      BalticSatApps WeSeaChallenge, Turku**

ESA BIC Space Hack was an innovation challenge where BSA acted as a partner with the role of providing mentors and judges, while all of the practical arrangements were outsourced to Ultrahack, an organization that has extensive experience in organizing hackathons since 2015. The winner got to the BSA acceleration program, where they had great success, and received additional financing.

<https://esabic.fi/join-esa-bic-space-hackathon-2018-apply-now/>

WeSeaChallenge was in turn an event where BSA was the sole organizer, and aimed to deploy everything learned throughout the BSA project. The judge panel was formed from the competition partners and the experts of the BalticSatApps project.

Each of the partners provided one challenge to solve, and therefore it was logical to have one person from each partner to assess the solutions from the teams. The challenges were closely linked and broad enough to allow experts from the other BSA partners to act as judges instead of requiring very specific expertise.

Keep in mind that providing money or prizes is not the only possible means of sponsoring - for example, providing a location to host the event or food for the event is equally important. Sponsors and their roles in the event are further discussed in their own section.

### Topic owners

Topic owners are groups or organizations who have provided a specific topic for the event. To make sure that the event's results address the topics in a way the topic owners have meant, engaging them in the event is strongly advised. It is preferable to have representatives of the topic owners present during the actual event to ensure that their knowledge and opinions are readily available to the participants, but knowledge transfer can also be done via pre-event training and information sharing. It should be noted however that all one-way knowledge transfer methods (such as pre-shared material) are inferior to two-way methods (i.e. having a representative readily available).

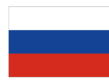
**Companies** are privately held organizations which generally bring topics that are at the moment non-actionable to the company themselves, but estimated to represent novel revenue streams in the future. Companies generally withhold details that are specific to their revenue generation, which may affect the knowledge transfer on the topic. Topics from companies are generally highly motivational, as they provide direct links to the company, their revenue streams, and possible clientele that aid participants in their career development.

**Public sector** consists of governmental organizations that generally bring topics that are directly related to the purpose of the specific organization. Public sector organizations often have concurrently running projects which share goals with the given topic, which generally provides excellent means to provide further motivation for tackling the topic, as there are possibilities of continuation as the project(s) outlast the event.

**Non-profit organizations** share traits with the public sector if the organizations have funded projects and staffing available. In other cases, the non-profits may have very limited resources at their disposal and this may affect how they are able to aid the topic post-event. However, non-profits generally share



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an unparalleled enthusiasm towards advancing the topics they find interesting (since this basically defines the non-profits' existence). This is a matter that should be used towards motivating topics coming from these organizations.

## 2.5. Facilitators and other staff members

Facilitators are responsible for the concrete organization and execution of the pre-, on-, and post-event actions. This section outlines key groups that are needed for the event to succeed management-wise and offers suggestions as where to recruit people, while their roles during the event are discussed more in-depth in the respective chapter.

**Event organizers** Planning the event is one thing but to actually hold it is another. Having a clear picture of how the event should unfold and who is responsible of what at any times is a must to make sure everything goes smoothly and is under control. The best practice is to have the same people who plan the event also participate in its execution since they have the best picture of all the “what, when and how” of the event. Additionally, it is good to recruit volunteers to aid in carrying out all kinds of tasks during the event. This means some extra costs even if the volunteers don't get paid at all -- they still need to be fed, and depending on the event, a place to sleep. The actual roles present during the event and division of labor is discussed in chapter three.

**Mentors** Mentors can have many varying tasks during a short-term event, from overseeing the participants to providing in-depth assistance or giving feedback to the teams during the event. In many cases, mentors have more experience or skill level in the topic than the participants so that they are able to help when problems arise, but if the event is aimed for professionals or people who are already experts in the field,

## BalticSatApps Hackathon 2019, Cracow

Participants received mentoring during a pre-event workshop as well as during the actual event.

During the workshop, each participant could benefit from technical assistance, mentors from various disciplines and participate in a training course devoted to making an excellent presentation.

During the actual event, a remote sensing course was also organized. Mentors

answered questions related to satellite data, its use in practice and interpretation, business, business plan, and matching the project to the appropriate audience.

Participants received many answers to questions and problems related to the scope of knowledge available to mentors and organizers of the event. The mentors included specialists from the private and scientific sectors as well as representatives of non-governmental organizations.

this might not be the case. When organizing an event for university students, mentors can be recruited from senior students or those who have gathered a good amount of practical experience in other ways. If there is a software company involved in organizing the event, they might be able provide some of their employees as mentors.

**Judges** While looking for judges for the event, you have to consider their expertise and impartiality. The judges can often be chosen from within the sponsors, partners or organizers, but in some cases it can be better to have judges from outside the event organizers. This is the case when the organizers themselves do not have the expertise to judge the contest or they have too many connections to the participants to be able to judge fairly, which might be the case if eg. alumni organize an event for students, some of which they know beforehand.

As an organizer you have to have a clear idea of the evaluation criteria for the solutions of the competition. This gives you a good idea where the judges for the event should come from. The easiest way would be to select the judges from the event organizers as mentioned above, but sometimes this is not possible and you have to look for the judges elsewhere.

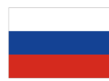
Universities and companies working in the same field as the events topic is always a great source for judges. But keep in mind that getting judges from external sources usually means some extra costs at least in the form of covering their traveling and other expenses, what has to be taken into consideration when planning the event budget.

When recruiting judges from outside, they are usually not as closely involved in the event design as the organizing parties, and thus aren't as familiar with what is intended to be achieved in the event. To ensure that everyone is on the same page and the judging is done in a way that serves the intents of the event, it is essential to define what is to be judged and communicate it in a clear manner. Sometimes you also might want to assign different roles for different judges. If the challenges or parts of the challenges are specific enough that they are to be judged by a specialist, it is better to communicate these roles beforehand with all of the judges, so that they have a clear picture of what is or isn't expected from them.

Even with challenges that don't need expert knowledge, you still have to emphasize that the judges cannot evaluate in a meaningful way aspects they



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aren't familiar enough with. A gut feeling alone isn't a solid base to have an opinion on. Keep in mind to bring this up in a considerate and professional manner, as not to accidentally downplay your judges.

Also take into consideration that people do things in a different manner so some people need more time than others. In this case it could mean that some judge might do things a little different than others. This doesn't take away their expertise but it is one thing that you have to think about when planning the events timetable. Make sure that you give the judges enough time to do their work. By themselves and in a group.

## 2.6. Promoting the event

After mapping your topic and finding your target participants you should think about how to reach these participants. Promotional activities should be carried out at least 2-3 months before the date of the event and conducted simultaneously on many levels. Apart from analogue advertising materials such as posters and leaflets, it is crucial to use social media and to find possible contact networks that could aid in reaching potential participants.

In addition to reaching primary target groups, it's possible to find potential participants who have their own point of interest in the event. Some could be interested in a certain part of the topic instead of it as a whole, and still be eager to participate. People interested in open data usage is an example of such topic enthusiasts, as they might be keen to participate in events dealing with open data even if the other aspects of the event aren't too relevant to their interests. Identifying and promoting certain attributes could attract different kinds of enthusiasts and bring diversity to the teams and to the event as whole.

### BalticSatApps Hackathon 2019, Cracow

For the Act In Space Poland the promotion of the hackathon in 2019 started already in December 2018, organizing lectures during the Christmas Mapathon, organized by the Department of Geoinformatics and Applied Computer Science of the AGH University of Science and Technology.

During the lectures, over 100 people participated in a lecture on the possibility of using the Copernicus platform. The participants were also informed and encouraged to participate in the hackathon as part of the BSA. In February 2019 a promotional campaign was launched. The campaign included social media, blogs, thematic services, thematic services or advertising materials.

**Promoting through social media** Facebook and Twitter are two of the prevailing channels for reaching large numbers of people, and promotional activities on them can be launched well in advance. In recent years, other platforms, like Instagram, Snapchat or Discord, have surged in popularity among young people. This is an important factor to consider when you are contemplating ways to promote your short term event. A website that is independent from any platform but could be advertised through them is a possibility. Establishing a blog may also be a good way to reach the audience throughout the phases of the event.

**Promoting through universities** Connections to universities are invaluable when trying to reach students. Information about the event can be sent to student organizations and research student groups, as well as academic teachers that could encourage students to participate. Different faculties often have an email address that you can contact directly and ask how you'd be able to promote the short term event to the right students.

A considerable possibility is that academic staff could also be able to validate participation in the event as a formal attainment of the university, so that student participants could be awarded with credits, which would increase the appeal of the event for students. The event could also be tied to a guest lecture about satellite data usage, as academic teachers are often open to having occasional guest lecturers in suitable courses.

Requests for sharing of the event's information could be sent to all official press offices of the universities, as well as to people who are involved in the promotion of particular faculties. It is also worthwhile to involve and inform other universities which do not educate students in the desired fields of study.

**Promoting through organisations** It is also a good idea to contact local non-governmental organisations that work in the same field as the events topic. Some companies are very open working with universities and other research institutions. Usually the companies most open to collaboration are very active themselves to find partners to research or develop their products or services. These







companies are most often very open to the ideas of organizing short term events to widen their perspectives and to get more ideas.

They can promote your event to their members and their contacts. They can also give new ideas for organisations and companies that you could contact and promote your event. It is worthwhile to create appropriate promotional materials, including a film discussing the assumptions and rules of the competition, as well as make efforts to obtain a media patron. At the promotional stage, it is worthwhile to local interest companies operating on a similar subject as partners of the event and sponsors of individual prizes (depending on legal possibilities). The prizes should correspond to the interests or directions of the participants

One of the options is also establishing contacts with companies that are looking for trainees - perhaps the reward in a hackathon could be an internship in one of them.

## 2.7. Sponsors, awards and extra services

Acquiring sponsors that are able to provide resources or cover some costs broaden the possibilities of an event. In addition to direct financial aid, sponsors can engage in the actual practicalities by offering the use of their facilities as the venue for the event. Getting sponsors is highly recommended!

Sponsors can provide the event with eg. cash, space, food, event advertising or apparel, with the expectation that they also get something out of their support for your event. Sponsors might be recruiting/hiring, and are looking to scout out your attendees, or they might be marketing a product they wish to promote at the event. At first, figure out the budget — all costs — so you know how much in sponsorships you need. When the budget is somewhat figured out, the very next thing is to get started on securing sponsors.

Sponsors can prepare presentations about their companies/activities in an open session. Sponsor-provided issues/problems of the are often used as challenges in events. Participants work on and prepare new solutions for dedicated problems. Sponsors can use the participation in events to promote themselves and to recruit new employees.

### BalticSatApps Hackathon 2019, Cracow

Participants received a set of gadgets at registration: a bag, a bow, an ID badge, a pen, a participant's book, a mug, a T-shirt, and Notes.

Awards consisted of the main prize was a voucher worth 1500 PLN and a certificate and automatic qualification of the team for the acceleration program. The second prize was a certificate and invitation to the acceleration program and additional starting points in the evaluation of the application in this program and

a voucher worth PLN 1000. The third prize was a certificate and invitation to the acceleration program and additional starting points in the evaluation of the application in this program and a voucher worth PLN 500.

Catering was implemented so that participants were provided with a coffee break, lunch and afternoon tea on day one and a coffee break and lunch on day two.



## ActInSpace 2018 – BalticSatApps challenge, Cracow

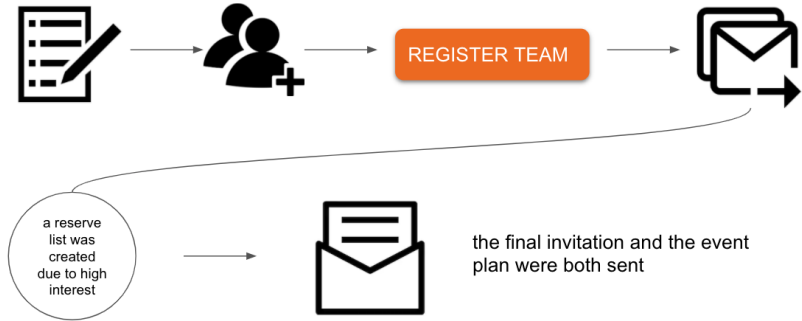
During registration, each participant received a T-shirt with ActInSpace, BSA EU and InterReg logos, a pen, notes, ID badge, and a folder with detailed information about the hackathon and presentations of the profiles of mentors and organizers and links to the Copernicus platform, as well as information about the BSA project.

The main award of the hackathon was a funding for the winning team to travel to Toulouse for the grand final of the ActInSpace, and a kindle reader. The second prize was a trip to Warsaw for the national final, where the team also fought for the opportunity to travel to Toulouse. All participants received additional prizes (according to the ranking of projects) ranging in headphones, HDDs, pen drives, and mugs with BSA logo. The prizes were awarded according to the total number of points received from individual members of the jury.

Catering was provided for hackathon participants in the form of lunch and dinner on the first day, and breakfast and lunch on the following. As part of the catering, participants were also provided with 24/7 access to snacks and drinks (also at night).







The registration process as a diagram.

## 2.8. Registration

This section covers the basic concepts of registration of short-term event participants. Depending on the event type (hackathon, workshop, info day) it's highly recommended to provide a sign-in form for gathering relevant information of the registered participants or teams. This information can be used to profile candidates or teams in terms of correlation with selected challenges, intended target groups, participant statistics etc.

### Registration through a dedicated website

For hackathons where participants need to register as a team, we've created our own form, deployed on the [balticsatapps.pl](http://balticsatapps.pl) website. Our form contains questions and fields relating to our specific events, allowing us to gather information tailored to our interests. In addition, creating a form of our own allowed us to implement features like ability to attach documents, regulations for approval, setting a limit on the number of team members, limiting the number of teams that could take part in the event, and a specific form that will provide the opportunity to create a team and define its composition.

In addition, it is necessary to include a condition for consenting to data processing in the team submit form. Also, after registering the team, each member receives an e-mail containing a link to through which they must

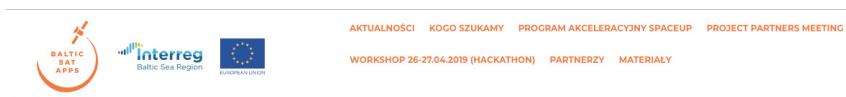
confirm they have read the regulations and approve of necessary measures, including those regarding data processing for the purposes of hackathon. By confirming their participation, the participant declares they have understood where and when the event is taking place, and confirms they will be present during the event.

A member registering the team needs to provide the following information:

- Team name.
- Some information about the team, like the story behind its creation.
- Which one of the challenges they are selecting.
- Describe the team motivation.

Contact details of each participant must be provided, such as:

- Their full name.
- E-mail address.
- Their source organization or university.
- Optional phone number.



## REGISTER YOUR TEAM

Two days workshop!

\* Team name

About the team

Motivation

Challenge

Identify all team members, start with entering the captain name. The team can consist of 2-5 people.

[Add team member](#)

[Rules.pdf](#)

I hereby declare that I have read and understood Rules and Regulations. I undertake to inform the other  
 team members about the rules.

[REGISTER TEAM!](#)

Registration form for creating team and participants.

After sending the application, each participant should receive a confirmation email. The message should contain:

- Thanks for participating in recruitment.
- What to prepare for a hackathon.
- The agenda of the event.
- The aforementioned link to confirm knowledge of the regulations and provide consent for processing of their data.

Selection criteria should be based directly on the participant's profile. The application database is the output file for creating three groups:

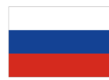
- Qualified people approved for participation in the event.
- Reserve participants.
- Rejected applicants - those who did not go through with approving the conditions in the forms or the confirmation link. It is worth keeping such a collective list in the event of security in the perspective of subsequent recruitments.

Due to the dispersity of channels for locating qualified participants through, it is worth focusing on proactive contact at several points of contact. The registration process described allows to send confirmation emails to all the participants entered through the registration team form. It's highly recommended to connect the registration form with an event page created e.g. on Facebook. Thanks to that, we will have direct contact with users, who join the hackathon by clicking the facebook page of the event and register for hackathon through a link to the implemented form. With facebook we can connect the registration button to our form.

Connecting the participants through email establishes a channel for long-term contact. Through email, the participants can be reached to collect feedback, to engage in past-event operations and to inform them of future events. This ensures an automated process, direct access to all people. But there is also a risk of skipping messages (e.g. SPAM). As a second mode of connection, a social media site such as a Facebook event can be beneficial. There are of course some pros and cons of this solution. We can also automate the contact process and rely on verification of reading posts and messages. The major drawback of a light or automated process is that a lack of a proper registration form reduces the feeling of commitment from the participants' side, which can result in more people signing up but not showing up.



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The screenshot shows an Eventbrite event page. At the top, there's a search bar and navigation links like 'Browse Events', 'Create Event', 'Help', and 'Sign In'. Below that, a banner for the event 'WORKSHOP' is displayed with a background image of a landscape. The text on the banner includes 'Inteligentny monitoring Ziemi za pomocą satelitów programu Copernicus' and 'KOTŁOWNIA GODZ. 10:00-13:00'. To the right of the banner, there's a 'Free' price tag and a 'Details' button. Below the banner, there are logos for 'SPECTATOR', 'VIZIOPOL', and 'Copernicus'. At the bottom of the page, there's a section with the text: 'Workshop dotyczący sposobów monitorowania Ziemi z wykorzystaniem danych pochodzących z systemu Copernicus prowadzony przez firmę Spectator.' and 'Date And Time: Mon, December 9, 2019 10:00 AM - 3:00 PM CET'. A 'Sales Ended' status is also visible.

## Event page of BSA–Spectator Workshop created on Eventbrite

### Registration set up with Eventbrite<sup>7</sup>

For the purpose of registration participants, when creating a team is not necessary we can use the online platform which collects all the events, promotes it, and provides easy to customize tools to create booking page. It's good to use such a platform as Eventbrite in case of info days, workshops and one-day short term events. Eventbrite is an event-planning web application, which provides a tool to create an event page, register attendees, track attendance, and send virtual tickets online by email. With this application we have complete control over how event page looks. Eventbrite also gives the ability to promote created event through social media, to send out invitations, and to have event be findable through most search engines. It also gives the possibility to track and evaluate participants' registration in real-time. Unfortunately, it's not recommended to use that platform in case of bigger events, such as hackathons. This is because we can't set up team registration in it. Also creating a sign-in form is not customizable. So the user can't give important information such as source company, university, or even motivation. Also is not possible to ensure a user method for selecting challenges with Eventbrite.

But it's good to point, that with the usage of Eventbrite we can easily create a participants list to sign by each of them during the event.

### Registration limit

<sup>7</sup> <https://www.eventbrite.com/>

The registration form should have set a limit of participants for info days, one-day events etc., teams limit in the case of hackathons, members of team restriction (it's recommended to build teams which consist of at least two members, but no more than 5 participants). If the week before the end of the process the number of registered participants does not exceed 40% of the assumed, it is worth taking steps to increase the reach of potential participants. We should constantly monitor interest in the event. All these limits should be adapted to the possibilities provided at the event, the number of seats, the number of mentors per team. Also good advice based on our experience is to set the participants limit 10% above the organization's possibilities. This is because some teams register, approve all the regulations, but finally don't appear.

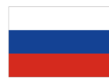
### Regulations

Based on the above subsections we can see that participants' registrations should be different for specific types of short term events. Hackathons have the problem for registering participants gathered in teams, so every team member should be able to approve event regulations. However, in the case of registration for one-day events, info day etc. there isn't such a problem. Both examples should pay attention to the limit of participants, monitor their interest.

It is a possibility to register the participation of the team during the event, without prior registration. Such a case should be included in the regulations. Allowing registration on the day of the event has its good and weak points. People who for various reasons did not have access to the event, could not find it on the network, and information was not delivered to them, may decide to participate at the last minute. We had such a case in the BSA Hackathon in Cracow 26-27th May 2019. One team asked us about the possibility for registration, this is because they came from a far away city. Their interest in that event was so high, that we as an event organizer allowed for that. This team was formed from two participants, who presented a very high level in the satellite data field. They didn't win that competition, but their idea was really good amongst the others. Based on that people who decided to take part in short term events may present very high knowledge and interest in the event topic. However, there is a con, which is that other teams had to adapt to the rules and register in a timely manner. This case should be precisely specified in the regulations and should be decided by event organizers only in special cases.



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Taking this all into consideration we have three types of registration:

- team formed in advance and registration as a team ,
- registration as individuals,
- a team formed during the event.

The first can be problematic when in case of regulation and grant approvals. This can be resolved in two cases, in the first one people register individually, accept all the regulations and terms with online form and form teams on the event day, before it begins. Second, as we described in the first subsection of this chapter, team captain register team, describe how they form it, he provides emails and each team member name and surname. The captain team accepts event rules, but after registering the team, each member receives an additional link through which is required to confirm knowledge of the regulations and provide the necessary approvals, including regarding personal data approvals for the purposes of organizing the event. Only in the case if all people from the team accept event rules, they can take part in the short term event.

## 2.9. Logistics, location, and practicalities

Choosing the right event location is one of the most important organisational decisions. Optimal conditions for organising a hackathon discussed in this chapter include accessibility, nearby services and utilities both inside and around the venue.

If you are not holding an exclusively remote event, the location of the venue plays a big role in event practicalities, especially from the participants' perspective. The bigger the event, the more things there are to consider - if the event is for a handful of students, held in their own university during one day, there might be close to almost zero preparations needed.

It is worth mentioning that the attractiveness of the location may greatly influence a team's decision whether to apply for participation. This of course mostly concerns teams from outside the city in which the event is organised, but in some cases it might affect the decisions of local participants, too.

**Necessities** There are certain requirements that are practically mandatory to be met when organizing any kind of a hacking event as they play a major role in the participants' experience.

- Enough power and sockets for every participant.
- A reliable wireless internet connection.
- Enough workspace. Ideally, every team should be able to have their own room or some other kind of designated space where they can work without disrupting each other.
- A common space which can hold all the participants for occurrences like info sessions or judging.
- Space for participants to relax - a zone of silence, equipped with comfortable armchairs or sofas.

- A catering space or canteen, especially if there are no nearby shops or restaurants.
- Coffee, energy drinks and/or snacks.

**Accessibility** Is the location right in the city center, or is it further away? It is good to check routes and public transport connections to the location and provide participants with suitable instructions, as well as sufficient parking space. If there are participants arriving from elsewhere, locations that are easily accessible from the local bus or train station are preferable. Remote locations might be more affordable, but short distances are easier on people without cars, e.g. most students.

For camp-like events where participants are supposed to stay at the site for the whole duration of the event the distances are not as crucial, and it might be even preferable to have a camp in a more remote location. If the venue is not accessible with public transit options, managing carpooling or renting a minibus to transport participants to the venue aids those without a car.

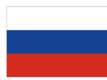
**Accommodation** Participants coming from outside the locality or even from other countries need places to reside in during the event. Does the location have rooms that can be used as dormitories, or is there a budget to book hotel or hostel rooms to accommodate the participants? On-site accommodation in sleeping bags is a prevalent solution especially in many events aimed at students, but other audiences might prefer more comfortable sleeping conditions.

If the accommodation is organized at the venue, sleeping areas should be separated from others to ensure peace and quiet for sleeping participants regardless of those awake proceeding with their work.

**Refreshments, snacks and food** During the event, participants need to eat, and for them, nourishment provided by the event organizers is the most comfortable option. There is a generalization of pizza and energy drinks being the food of choice at hackathons, and it is true in many cases, because it is an easy solution, but especially in longer events, consider healthier and more variable options. A simple way to provide basic nutrition and refreshment is to constantly have water, coffee and some snacks available and to gather the participants before each mealtime to ask their preferences and then order food for everyone at once. Remember to keep in mind food allergies and diets!



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## ActInSpace 2018 – BalticSatApps challenge, Cracow

The hackathon took place on 25–26.05.2018 in the modern building of the Krakow Technology Park in Cracow at 60 Podole Street. These were the regional preliminaries of the international ActInSpace

Participants were provided with access to a modern, air-conditioned open-space room, wireless network, meals, snacks, toilets and showers. Each participant could rest and relax in designated places; take a break from work. Additionally, rooms for rest, small group work and sleep are provided. The competition lasted 24 hours during which, under the guidance of mentors, participants developed solutions related to the processing and use of satellite data and space technologies. The disadvantage was the distance from the city centre, bus stops and a definite deficit of parking lots.

Before organising the next event, it should be discussed whether there is a possibility and need to change the event location. The city center may encourage more participants. The decision can be based on a survey that will be posted on the event website. The survey can also be sent to former participants of the hackathon or students. In the case of a decision to change the place of the event, it should be considered whether there is a chance to organise it in the second location of the KTP (Czyżyny) or one of the University buildings.

The above assumptions were fully implemented by the organisers, as the event took place in one of the buildings of the Cracow University of Technology, located in the very centre of Cracow. Compared to the first event, the number of participants has almost tripled, and one of the reasons for the increase in attendance can be seen in the change of location of the hackathon.





**Surroundings and nearby services** Locations that have sufficient shops and services nearby are often the best choice for any event. Being able to shop for their own foods and supplies at any time is usually preferred by participants, even if the base meals are provided by the organizers. Find out in advance what shops and services there are nearby, and provide directions for all participants. Restaurants with takeout possibilities are a particularly sound option to have nearby, especially for joint food orders of participants and organizers alike.

**Possible locations** If any of the organizing partners or sponsors have facilities that meet the requirements for holding the event, it's practical to make use of them as the venue. Companies' office and meeting spaces, universities' lecture halls and classrooms might be great spaces for the event as they are, or with some temporary adjustments. In other cases, it is best to check your connections and ask around if others who have organized hackathons in the area would have recommendations, and if they'd introduce you to their venue providers.

Renting a venue could easily multiply the expenses of the event, and striking a deal where the venue owner's gains are immaterial would be preferable, especially on a tight budget. Some companies might be happy to get a chance to promote themselves as a compelling employer for the participants, or to join as a sponsor.

In addition to private spaces, a hackathon could be held in a public space like a library. If there are any local hackerspaces or similar community-oriented actors, make sure to check them out, too.

**Remote events** An event can also be held partly or wholly remotely. Team members can participate through video calls or group chats or similar remote solutions. In a wholly remote or virtual event, there is no need for an actual venue, as everyone can participate from the comfort of their own home.



## 2.10. Planning the event timetable

When the essentials are planned in advance, it's easier to keep track of what should happen and what shouldn't. Both the participants and those running the event feel more content when they know what to expect next, as opposed to making everything up on the fly. A well-planned schedule doesn't need to track every minute, and it is actually better to leave some room for maneuver in case something takes a longer or shorter time than expected.

Hackathons generally follow the agenda of introduction of the event and challenges, group or other arrangements, hacking, and evaluation of the solutions developed. Additions and tailorings of the event are generally built around this premise.

**Working shifts** For the staff, mentors and volunteers the most important schedule aspect is to know when they are working their shift, so alongside the participant schedule it's advised to have a separate staff schedule as well. For the staff, it's good to also have the contact information of everybody in charge during the shifts so it's easy to check who to contact at which time if something happens.

Advanced Training School on Remote Sensing "Applications of Remote Sensing in the Baltic Sea region"							
Schedule							
	Sun 15 September	Mon 16 September	Tue 17 September	Wed 18 September	Thu 19 September	Fri 20 September	
09:00-09:15							09:00-09:15
09:15-09:30							09:30-09:45
09:30-09:45		General introduction to Remote Sensing (Pia Post)	Remote Sensing of Atmosphere (Johanna Tamminen)	Introduction to ESTHub (Ants Vain)	ESTHub training 1 (Brockmann)	Water quality - water measurement demo at Lake Kubija (Krista Aitikas)	Sea ice services for the Baltic Sea (Juha Karvonen)
09:45-10:00							
10:00-10:15							10:00-10:15
10:15-10:30							10:15-10:30
10:30-10:45		Coffee break	Coffee break	Using Satellites and Gliders to study practical dynamics in Coastal Waters (François Bourrin)	Coffee break		10:30-10:45
10:45-11:00						Coffee break	Sea ice service Infocenter in Estonia (Jekaterina Sliuzenikina)
11:00-11:15							11:00-11:15
11:15-11:30		Introduction to Remote Sensing: Active Remote Sensing (Jean Praks)	Satellite-based fire monitoring (Ivan Csizsar)	Introduction to Sea Level training (Fuan Tsai, Kuo-Hsin Tseng)	ESTHub training 2 (Brockmann)	Using Satellite Altimetry to detect Sea Level Changes (Kuo-Hsin Tseng)	Future missions (Rene Lauffer)
11:30-11:45							
11:45-12:00				Preparations for excursion			11:45-12:00
12:00-12:15							
12:15-12:30							12:15-12:30
12:30-12:45							12:30-12:45
12:45-13:00							12:45-13:00
13:00-13:15		Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
13:15-13:30							
13:30-13:45							13:30-13:45
13:45-14:00							13:45-14:00
14:00-14:15							14:00-14:15
14:15-14:30							14:15-14:30
14:30-14:45		5 min presentations	Short lectures (Vello Toit, Krista Aitikas, Sven Lilla)	ESTHub training 3 (Brockmann)	Integration of Geospatial Data for Monitoring Land Use and Building 3D Models (Fuan Tsai)	Group exam	Group exam
14:45-15:00							
15:00-15:15							15:00-15:15
15:15-15:30	Transfer to Võru Kubija						15:15-15:30
15:30-15:45							15:30-15:45
15:45-16:00		Coffee break	Coffee break		Coffee break		16:00-16:15
16:00-16:15							16:00-16:15
16:15-16:30		Introduction to Remote Sensing: Baltic Sea (Rivo Uiboupin)	Remote Sensing Application to Agriculture (Kaupo Voormansik, Toomas Tõrra)	Excursion to South Estonia and drone demo Dinner at Suur Muna	ESTHub training 4 (Brockmann)	SAR interpretation (Jaan Praks)	Transfer from Võru Kubija to Tartu
16:30-16:45							
16:45-17:00							16:45-17:00
17:00-17:15							17:00-17:15
17:15-17:30	Opening of the training session: Copernicus - European Eyes on Earth (Anu Reinart)						17:15-17:30
17:30-17:45							17:30-17:45
17:45-18:00	5 min presentations	Dinner	Dinner	Dinner	Dinner	Dinner	Dinner
18:00-18:15							
18:15-18:30							18:15-18:30
18:30-18:45							18:30-18:45
18:45-19:00	Dinner						18:45-19:00
19:00-19:15							19:00-19:15
19:15-19:30							19:15-19:30
19:30-19:45			Workshops				19:30-19:45
19:45-20:00							
20:00-20:15	Icebreaker						20:00-20:15
20:15-20:30		Walking to town Võru					20:15-20:30
20:30-20:45							
20:45-21:00					Entertainment		20:45-21:00
21:00-21:15							
21:15-21:30							21:15-21:30
21:30-21:45							21:30-21:45
21:45-22:00							21:45-22:00
	Sun 15 September	Mon 16 September	Tue 17 September	Wed 18 September	Thu 19 September	Fri 20 September	

Color-coding allows for a quick overview of the event structure.

**Pre and post events** Pre-events and training sessions can be held at the start of an event, or in advance. For local participants a pre-event held in advance is usually no problem, but for those coming from far away it might be inconvenient to make many trips due to one event, if the separate pre-event is just a couple of hours of training. So for participants coming from far away, make sure the pre-event feels worthwhile if it is held separately. For post-events the same applies.

**Starting times** Not everyone is a morning person, and even on weekend events it might be better to initially start no earlier than noon. This would also accommodate people coming from out of town, so they aren't forced to travel by night or arrive a day early to be able to be on time. While the event is in progress, participants might have different rhythms, and some will work well into the night waking up equally late, so it might be good to extend breakfast times and refrain from scheduling crucial activities really early in the morning to ensure the late nighters may also participate.

**Activities.** In some events, the entire duration might be dedicated to hacking, but especially during longer events it's good if participants can put their minds on something else every now and then. Creative breaks enable new perspectives to emerge when returning to work. This can be done by arranging common activities like gaming sessions or light workouts together, or having independent activities available for everyone to engage whenever they feel like taking a break. Board games, party games, and such have proved efficient entertainment. Remember though that not everyone might feel like participating and the activities should be voluntary.

**Food and mealtimes** Regardless of how you are planning to feed the participants, if food is provided by the organisers or if everyone is supposed to bring their own, it's good to remind participants to take a break to eat by scheduling common mealtimes. Everyone also gets a possibility to hang out and socialize with others during these breaks.

**The grand finale** When the event is nearing its end, it is good to remind the participants of the remaining time by announcing when there is one hour of hacking time left. There might be a short break after the deadline, after which the teams present their solutions. The presentations might have a time limit, but it is again good to estimate some of them going overtime or to leave time for some discussion. Leave also some room for celebration and laid-back conclusion of the event after the judges' decision.



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## Program example from Tartu SpaceApps Event, Tartu

Friday, 20th of October

At 5:00 pm we opened the check-in for participants, and at 6:00 pm we started the Welcome session: All gathered in the main auditorium. We started with some introductory words, explaining the general program, the available locations and important housekeeping notes for the weekend.

As part of the Welcome session we had two expert Earth Observation / Satellite Data presentations:

Starting with Dr. Anu Reinart, the Director of the Tartu Observatory, who discussed the value of freely available satellite data and how applications of remote sensing can solve various challenges on Earth. And followed by Aimo Kõva, the Vice President of International Sales at AS Datel, who demonstrated what type of applied remote sensing applications are used to solve immediate planning issues in the world's cities.

We introduced the mentors, who would be around on the hackathon for at least about 2 hours per day and give feedback about the work that teams have been doing. Then suggested topics were presented in short pitches. Several topics were brought in by participants, and several were proposed by sponsoring companies or from UT scientists. Teams had to be composed of people with different complementary skills and have at minimum 3 up to 5 (in exceptional cases maybe 6) members. Eventually, from all pitched ideas, 8 teams could be formed successfully and we formally announced the start of the hacking time!

On Friday and Saturday evenings the building (Vanemuise 46) had to be locked by 11:00pm and participants had to leave and were encouraged to get some sleep. On the mornings of Saturday and Sunday it was reopened at 8:00 am to the participants again.

Saturday, 21st of October

Day is completely dedicated to hacking.

During the course of the event, the raised funding from sponsors was used to arrange food and drinks. Snacks, fruits and sandwiches were made available throughout the event, prepared by the volunteers. Friday dinner was pizza delivery sponsored by Datel, and Saturday and Sunday complete catering was sponsored by Tartu Science Park.

Sunday, 22st of October

Around noon we gave the teams a short upgrade on their pitching skills with a short presentation on things to consider to make the final presentation (the pitch).

4:00 pm (Final presentations and awards ceremony): All work had to stop, teams had to upload their results to public repositories like GitHub and update their dedicated NASA Space Apps project websites.

Everybody gathered in the main auditorium again. The teams then presented their results in fascinating captivating final presentations. Each team had a presentation of 3 to maximally 5 minutes. After the presentations the panel convened and graded all the teams by their presentation and results.

After the decisions were made the two winning teams were revealed and the prizes and certificates presented to the teams and the event concluded.

## 2.11. Ensuring success with pre-event preparations

Accessing and using some kinds of data can be complex, and hard to manage for someone that has not used it before. This is also true for satellite data. It might be useful to give some lessons before the actual event in how to access the data and how the data can be used. This way participants are less slowed down by figuring it out in the beginning of the event.

### **Materials and other subject-specific information**

Depending on the event topic, it is sometimes beneficial to give out information of the upcoming event so that the participants can have some idea of what is coming up. The information given beforehand can vary from defining a vague topic to giving out detailed information about the challenges.

If the challenges are very specific, or tied to a specific field, providing this information beforehand gives participants time to get to know the topic and to familiarize themselves with the challenges a bit. This will save your time presenting the challenges, and it also gives an increased chance to get better solutions since the participants are able to do some background work before the event.

Some ideas on how to distribute subject-specific information to the participants include short visual presentations by the challenge owners to provide insights in how the challenges might be approached, and short lectures by the subject experts to share knowledge about data and methods and expand the vision and scope of possibilities in the participants' minds. These presentations could also be pre-recorded and presented as videos on the website or at the beginning of the event. Providing online links and access to information and materials for self-study is also a good way to share knowledge.

### **Copernicus-specific details and training sessions**

We already know from previously organized hackathons that accessing and using Copernicus satellite data can be very difficult, especially for people who are not familiar with satellite data. So, if the usage of Copernicus and other satellite data is the central point of the upcoming hackathon, it would definitely be beneficial to have a training session before the actual event.

Copernicus pre-events can be arranged as an info session and/or data training.



Info sessions are short lecture-like sessions, where a field expert or several experts hold a speech about the state of the earth observation technology and data application and how they are linked to the purpose of the event. It is important to ensure that the participants have understood the types and potentials of the Earth Observation data, to maximize its use and to be able to brainstorm innovative ideas by using it.

Data training is a more hands-on approach, and whereas info sessions could be attended by a broader audience, data training sessions are usually restricted to registered participants only, since it is more resource-intensive. EO data training is particularly relevant for teams with no or little experience working with EO data. Here EO data access of selected platforms and APIs is shown to the participants. Also EO data processing demo is carried out, by introducing some free softwares (e.g. SNAP and QGIS) or by providing basic processing codes (e.g. in Python, R, Google Earth Engine). Some more specific training, on demand, can be provided after the events for the selected teams.



While planning these training sessions, it is good to start from sorting out sources for existing know-how. People who have organized and managed these kinds of training sessions before can possibly be found from the partner organizations or universities, but Copernicus support office can also be contacted for possible training managers.

It is not always possible to have a training session manager physically present at the location, but the sessions can also be organised via Skype or other software.

One important thing is to recognize how much training is needed. Is a few hours in the afternoon enough, or do you need to have a day-long training session, or even one that lasts over a whole weekend?

A training session can be held at the beginning of an event, or some time in advance. As mentioned before, the manager can share their knowledge remotely, but it is also possible to organise a wholly remote session so that also the event participants attend remotely, which brings room to maneuver in planning. Remote sessions or even assignments given to participants in advance give a chance for the participants to familiarize with open data usage to better prepare for the upcoming event.

### **Practicalities information**

The amount of information you have to give from the event itself is directly proportional to type of the event. For example, for a one-day hackathon held for local participants you only need to announce the purpose of the event, the challenges if necessary, the location at which it is held and how to get there. For an overnight or weekend event participants have to be informed about accommodation, if there are meals provided, and possibly about nearby grocery stores and other essentials.

Duration and location are the most important pieces of practical information for the participants to know beforehand, in theory everything else could be disclosed on-site when all participants have arrived. The dates and duration should be available well in advance so that potential participants know if they are able to attend in the first place.

The location can be decided and revealed later in the organization process, but it goes without saying that participants have to know where they should be heading to before the start of the event. If there will be participants from



out-of-town it's important to have good directions on how to get to the event from the airport, train station or bus station.

Making a leaflet with the essentials on it, like the timetable and maps of the location is often a good idea. It can be distributed to the participants via email before the event or dealt out at the beginning.

A good example for an informative leaflet to share to the participants of the event is the leaflet used in Hack for Sweden 2018, which can be downloaded at <https://bit.ly/3cTCbnL>. (outside link)



## ActInSpace 2018 – BalticSatApps challenge, Cracow

“To make the events more accessible, the following actions can be taken: it is good to provide the participants with short breaks during the hackathon itself. It can be in the form of a lecture, or even a short music concert. It is important for them to have one or two breaks longer than 30 minutes where they can relax, after which they can focus again. For example at the Act in Space event the participants could listen to the possibilities of satellite navigation use in integrated applications and options on how to develop them.” – Critical comments after organization of the short-term event

## 7-day online Hackathon: Satellite Data Challenges

In 2020, due to the COVID-19 pandemic, it was not possible to organize a stationary event. This forced the organizers of the 7-day Hackathon to modify the preparations preceding the event. This process can be described in 6 steps.

### Step 1

Create a core team for Hack Online vol. 1

Tasks for BSA Teams

**BSA KPT Team** – media, prepare participants for first days, mentors' group

**BSA CUT Mentors Team and Company** using Copernicus Data  
prepare hackathon topics,  
prepare and present workshop for participants,  
present one topic about Copernicus data on the first day of hackathon,  
every day be available to help participants for minimum 2h – online, on the rest of the day give support using #slack platform (on your free time),  
on the last day form the jury consisting of mentors for the final presentations.

**BSA CUT Team** – manage all tasks START/STOP

\*All materials for lectures (on the first day) and workshops must be uploaded onto our web page and google cloud – google drive – links should be accessible via #slack platform.

Communications for the Core Team

For this event we use #slack application (channels, text, voice, video and document storage) for communication during the preparation stage.

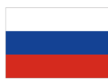
### Step 2

Define groups of participants. A standard group of hackathon participants was extended by the JUNIOR group (9-14 y.o)

The creation of the JUNIOR group increased the interest of not only children but also their parents who took an active part in the entire event.



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BSA CUT  
Mentors Team



BSA KPT Team



Company using  
Copernicus Data



BSA CUT Team



Materials storage

### Step 3

Mentors are to prepare topics on using Copernicus data in 6 services areas: atmosphere, marine, land, climate change, security, emergency

During Hack Online vol. 1 mentors should support, train, motivate, advice, guide hackathon participants.

## Step 4

## Prepare the plan for Hack Online vol.1 – before

## Pre-event harmon

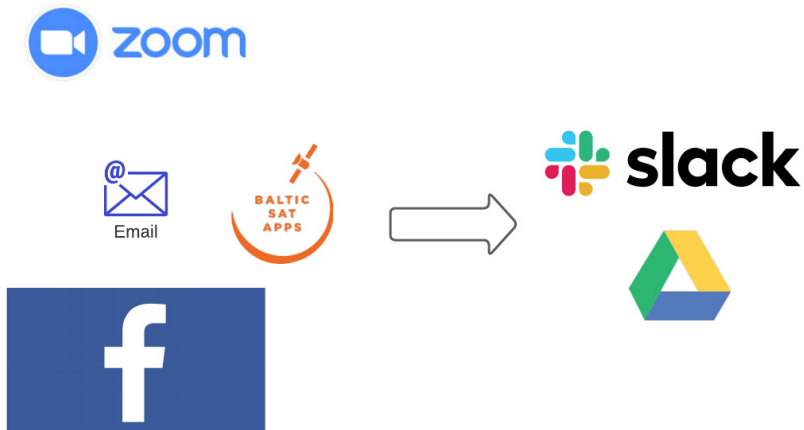
Activity	Details	Due date
Event date	18-24.06	14.05.2020
Title, initial agenda and date of the event		15.05.2020
Graphic materials and promotional content		19.05.2020
Regulations and awards	Regulations for All UE people	19.05.2020
Registration system / ticketing system	name, surname, email, team, GDPR	19.05.2020
Speakers / mentors	Topics / dates	15-22.05.202
Lectures / workshops		15.05.2020
Promotional campaign (to whom, where, how)	<ul style="list-style-type: none"> <li>• Universities</li> <li>• Companies</li> <li>• Mails database</li> <li>• Thematic websites</li> <li>• Industry partners</li> <li>• Facebook</li> <li>• Buy access do groups</li> </ul>	15.05.- 10.06.2020
Hackathon online tests		19.05.2020 10.06.2020
End of registration for the event		18.06.2020
Mail to participants – info about tools	Mail, Facebook, WebPage	28.05.2020
Mail to participants – preparations	Mail, Facebook, WebPage	01.06.2020
Mail to participants – a reminder	Mail, Facebook, WebPage	03.06.2020 10.06.2020 17.06.2020

## Step 5

Choose online tools. At the Hack Online vol.1 we used the following online tools:

- #slack – main soft for communication with participants,
- ZOOM – soft for webinars and online meetings,
- mail – additional information,
- webpage, facebook – schedule about hack online and information for the press and media

Based on the Hack Online surveys, it is advised to use one software to communicate with participants for this type of event. Therefore, based on our experience, we propose #slack and google drive.



## Step 6

## #slack configuration

It is best to create the following all access channels:

#hack-online-vol1-2020 – information and communication with participants,

#materials – all materials dedicated for the event.

A dedicated channel must be created for each team to communicate within the project group as well as to communicate with the core team.

The schedule for the Hackathon can be found in the Appendix.

## 3. During the event

### 3.1. Participants and their roles

During the event you should have a clear idea who is responsible for everything in the event. One person can't be responsible for everything so you should divide the responsibility as much as possible. Of course this is not always possible if you don't have enough people who are organising the event or volunteers. Also, please refer to Section 2.5 wherein different stakeholder groups are described.

When people have a clear idea of their responsibilities it is more efficient when something happens and you need to react fast and usually something like this will happen especially in events that last more than one day. Never forget Murphy's Law.

**Mentors** Mentors usually have two main tasks during the event- keeping an eye on the attendees' wellbeing, and helping the teams keep on track.

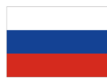
Sometimes, when people are really focused on something, they might forget to eat, drink or rest, so it is good to be on the lookout for tired or hungry attendees and remind them to take care of themselves. If the event lasts longer than one day, it might be a good idea to have mandatory breaks so that once in a while the attendees have to do something else than sit on a computer. Bringing up the fact that people work better when not tired, dehydrated or hungry might help motivate some of the more strictly goal-oriented attendees to take time off.

Helping the teams keep on track can be done by doing rounds and checking what each team is doing from time to time. If they are stuck or deviating from the initial goals for the solutions, mentors can help to steer them back on the right track. It's a complete waste of time for everyone if the team or teams are doing something that has no meaning for the competition.

Some participants might not be comfortable asking for help for various reasons, and the mentors should remember to ask the teams if everything is ok from time to time and to make it clear they are happy to offer assistance.



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If the teams have been formed during the event, it is more than possible that the members of each team don't know each other from beforehand. If mentors are able to support teambuilding and encourage people getting to know each other, it can really enhance how the team works together.

**Facilitators** carry partially the same responsibilities as Mentors, but the emphasis with this role is on facilitating the event flow rather than being able to help the teams with expert knowledge or any solution related matters necessarily. A facilitator is often a volunteer who is interested in the topic and likes to join the event by working in it. This should also be taken into account when facilitating the facilitators entry (e.g. via allowing enough free time). As main responsibilities, the facilitators should see to that all other stakeholders follow what was initially planned; groups work on activities, but hold breaks and come to joint sessions when needed, judges gather enough information to facilitate decision making, mentors are available and teams are steered to contact them. Generally, the facilitators make sure that a controlled creative chaos persists throughout the event.

**Judges** A role of the judge in the event is to evaluate the solutions provided by the participants. If the judges come from the organizers, they might have other responsibilities during the event, but when the time comes to evaluate the solutions there should be only one thing in their mind. To give fair and impartial evaluations of the solutions. The roles of the judges and how to recruit them are described in more detail in the Section 2.5.

## ActInSpace 2018 – BalticSatApps challenge, Cracow

“The evaluators should come from several disciplines. People who are familiar with programming techniques, able to detect reprehensible errors in the code, people with knowledge of earth sciences, able to determine the correctness of selected environmental assessment techniques. People with comprehensive knowledge of the Copernicus platform and representatives of business and marketing who would be able to assess the commercial or social potential of a given

solution. The following issues should be assessed: Coherence and correctness of the IT code. Suitability of the proposed solution. The amount of data used from the Copernicus platform. Business perspectives and revenue generation potential of each application. Marketing potential and the number of potential recipients. Substantive value of the project and its innovativeness. Completeness and operation of a ready-made idea. Possible future improvements.”  
– Report

## 3.2. Evaluation criteria

Dependent on the function and aims of the event, evaluation may take part in order to differentiate competing solutions from one another. Herein, the evaluation criteria is crucial. As discussed in previous parts, the evaluation part should be taken into account as part of advertising, the criteria should be made clear by event start at latest, during introduction the criteria should be visited and exposed for comments and feedback.

The criteria should be formulated according to the objectives of the event. There are several different methods for setting the criteria, but generally they consist from viewpoints or characteristics which are derived from the goals and allow gauging the solution for longevity, intuitiveness, and applicability. While the organizer can set the goals, the criteria is often best constructed together with neutral stakeholders, like judges and facilitators to get differing viewpoints and the working context fully accounted for. Having partially overlapping criteria is not necessarily a challenge, but special care should be exercised to not bias the criteria towards one goal and also to not introduce criteria that are mutually exclusive.

Finally when exercising the criteria, the evaluation is made against an output. This output can be the solution itself, and the judges take their time to acquaint themselves with it. However, if the event dictates that the output is some sort of a presentation of the solution, then the evaluation should take this mediation into consideration: some teams may require help with putting together a presentation for an excellent solution or other teams might require aid in delivering a pitch for their groundbreaking innovation. To ensure that the best solution is picked, the criteria needs to be exercised against it and not its proxy.







## ActInSpace 2018 - BalticSatApps challenge, Cracow

The regional stage of the ActInSpace Hackathon was a part of Baltic Sat Apps project. 9 teams of 2-4 persons took part in the elimination. Teams had the right to choose one of the ActInSpace challenges, which had been listed in information materials provided by the main ActInSpace Hackathon organizer. All teams chose the Baltic Sat Apps challenge and the conception of the regional stage of the hackathon in KPT was retained. Teams had to prepare apps that could utilize satellite data, especially data obtained from the Copernicus platform. Innovativeness and possibility to use in business was a significant part in the final mark of proposed apps.

The competition lasted 24 hours from the announcement of the start. The participants did not leave the building, and their struggle also lasted all night. The start was at 16:00 on 25.05.2018, and the end of the competition was 15:30 on 26.05.2018. During the competition, mentors talked individually with the teams, answered numerous questions about the Copernicus

platform, provided advice on the use of services and possibilities of the platform.

Afterwards, the jury went to a meeting room, specially prepared for this purpose. The presentation was discussed, and comments on the projects were exchanged. The result of the meeting was a ranking list of projects, according to which the winners were selected.

The criteria to be followed by the jury should include:

- a) Use of Copernicus data
  - b) Evaluation of the business plan
  - c) Innovation
  - d) Possibility of project implementation
  - e) The level of advancement - assessment whether the team presents only concepts, or a working demo of the application
- The team of evaluators should consist of people with experience in business, especially related to the implementation and management of IT projects/space technologies, scientists, remote sensing specialists and investors

## 4. After the event

Arguably the aftermath of the short-term event is even more important than the event itself. As the event pursues a suitable method to systematically combine correct stakeholders with one another in order to find challenge solutions or to innovate on particular topics, the post-event activities will serve as validators of these combinations and as valuers of the event in serving the outcomes to follow up activities. This pertains to having an organization for the continued development of outcomes through an iterative process. This chapter discusses three groups of follow-up activities: for the solution, for the participants and for the event itself.

### 4.1. Solution follow-up

The group of activities for solution follow-up can be considered as those actions that target the outcome of a particular group's work in a particular event. Arguably the solution follow-up should have the most attention: carrying the combined effort of a group of committed participants and concretizing an innovation into an exploitable, scalable, and further developable entity. Incubation team feasibility with owner team support as well as property rights are notable factors for following the solution with support.

#### **Incubation feasibility and owner group enhancement**

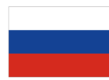
As we focus strongly on the usage of short-term events, we inherently discuss a method where a new solution emerges from an often lightly established group of people who work on a new topic that has just been introduced to them. No explicit supports (like an established company) exist other than the possible comradery and interest of the people involved. Hence, the solution is a prime candidate to be one and should be linked to activities where it can be emergent to an explicit supporting function.

Incubators are private and/or public organizations that pursue creation of new established business. This support allows the solution to be transformed into a supporting structure, a business, which enables longevity for the solutions development in the way of associating exploitable resources to it.

When a solution emerges from a short-term event, its incubation feasibility should be identified and explicitly associated to it. The authoring group then



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may decide if they pursue this venue. If there are matters affecting the feasibility, immediate support should be given to the solution that intends to increase it. From the perspective of iterative development, the main candidates identified here are further delegating the solution as an entry to a new, more advanced short-term event. This allows the hosting group to also acknowledge possible new resources and/or stakeholders to aid in advancing the solution. For solutions with high incubation feasibility, the incubator should be instructed to approach the solution holders. If approaching is left for the team, they can be unfamiliar with the processes and thus refrain from committing, risking the solution from never progressing into a sustainable business.

## ActInSpace 2018 - BalticSatApps challenge, Cracow

The hackathon resulted in six ideas for apps that use Sentinel satellite data, ranging from agriculture and forestry to path-finding.

**Vine crop monitoring** The app could assess the condition of vine crops and suggest agricultural treatments resulting in better harvests. In a further phase of this project, authors of the solution plan to extend the scope of the app for other kinds of crops. Considering the powerful potential of commercialization and possible benefits, the app was marked very high and won the regional stage of the ActInSpace Hackathon.

**Forest monitoring and forestry management** An app dedicated particularly for the State Forests organization units in Poland. The app could detect illegal forest-cleaning works or wood stealing.

**Disease and pest detection** The third proposed app would detect diseases and pest infestations in croplands with high precision. The app could also detect deficiency or excess of nutritional substances used in agriculture, and indicate a solution which would have the minimum environmental

impact for each farmland participating in this project.

**Pathfinding for hiking routes** The target group of this app are tourists, especially hikers. The app would suggest the shortest and most comfortable ways to the trip destination. Moreover, the app could be used by rescue services during a rescue operation to indicate the fastest and easiest way for injured persons.

**Solar energy forecasting** Apart from indicating potential locations of solar power plants, the app could forecast potential power production at a given time. For this purpose, the app would use data from a few dozen years of observation on solar radiation and cloudiness.

**Finding locations for housing** The app analyzes a series of satellite images, searching changes in land use and urban area in a given place and indicates best-suited locations for construction based on different user groups' preferences.

More details of the solutions can be found in the appendix.

## SpaceUp Acceleration Program 2020, Turku

Turku Business region in association with the University of Turku held an Acceleration Program in the spring of 2020 called SpaceUp. SpaceUp was an intensive program for leveraging business ideas with space connection into viable companies. SpaceUp offers mentorship, training and networking necessary to validate your business idea.

All the winning teams of the WeSeaChallenge had an invitation to the spring 2020 SpaceUp Acceleration Program. Registration for the program started in the beginning of 2020 and the program was held from 3rd of March to 27th of April.

Since not all the teams in the SpaceUp program were from WeSeaChallenge or other events held by BaltSatApps project partners the teams were introduced to the possibilities that Earth Observation has to offer. Also, the BalticSatApps project and its partners were introduced to the teams and explained that all the resources of the

project were in the team's usage if needed.

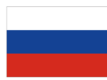
Each team was given the individual mentors whose assignment was to support the team during the program and if needed give extra guidance on the subjects needed by the team. In the beginning of the program each teams' technical needs were discussed. All the participating teams had either a background on IT or were otherwise familiar with EO so the need for technical support was very little.

Two teams from the WeSeaChallenge enrolled in the program. A winner team from the sustainable aquaculture challenge and a team that was formed by two participants of the WeSeaChallenge. Both of these participants participated as individual teams in the sustainable aquaculture challenge.

The winning team went through the program which meant an iterative development of the business idea and



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the technological solutions that the team had come up with in the competition. The team was introduced to the idea of starting a project with a possible client for their solutions but unfortunately this partnership didn't take place. Due to the team members' busy schedule in their personal life they decided not to continue with the idea after the program.

The team offered their technical solution to the other team from WeSeaChallenge to use so this way the work the team had done in the competition and in the SpaceUp program didn't go to waste. One of the ideas in the short-term events held in the BalticSatApps project was to have a continuum for the ideas and solutions presented in the events. One way to do this is to have the ideas given to other parties that are willing to develop the ideas further if the teams that had the original idea didn't want to continue with it.

The other team that was combined from the two teams of the WeSeaChallenge competition decided to take part of the SpaceUp program with the idea that was further in the development process and forget the other idea for the time being.

This team also went through an iterative development process with the business idea and technological solution. For this team it was clear that they would continue with the idea after the program and were very keen on the topics of the program. The team had worked with the idea and developed it further between WeSeaChallenge and the SpaceUp program and were hopeful that participating in this program would help them find possible customers or partners that they could further develop the idea. Luckily a local company contacted Turku Business Region for help to find a partner that could support their business plan by providing a solution for satellite data analysis.

The two parties were introduced to each other by the SpaceUp program and after the first meeting both parties made an proposal for the upcoming collaboration and when the terms were agreed with both parties an agreement was made in the late spring of 2020. They started to work in a common project that would be tested in the field in the summer of 2020. After the agreement the team is now putting up a company with the help of the SpceUp program and the experts in the BalticSatApps program.





### Property rights (intellectual)

As said earlier in chapter 3, it is very important all the participants know who owns the intellectual property rights to their ideas or solutions. This becomes even more important if the idea of the event is that from the teams ideas or solutions are taken forward to create business.

If the teams own the property rights to their solutions, which is usually the case depending on the property rights laws in different countries, then they have a right to do as they please with the solution. The question is that if a team had a great solution but doesn't have the means or time to continue with the idea is it possible for some other team or group of people to do so.

## 4.2. Participant follow-up

It is important to follow up on the participants of the event, and not just the winning team or teams. Even if people don't win they might still be very enthusiastic about the event's topic. A good example of this is given in the previous chapter about teams in the SpaceUp program.

One reason for the follow-up is that if you have events coming up with a similar topic that you just held you have a base for participants in the next one. And if your event was relatively small so that you had an opportunity to get to know your participants a little bit more than just by name. This gives you a great start to the next event because you already know some of your participants and their skills so you might be able to guide their work more efficiently.

With following up with the participants you can keep their interest in the topic alive in the future. You might not have any more events coming up about the topic but someone else might and they will need good participants for their events. And even if the next event isn't even about the same topic or field at all. People who are innovative and can come up with new ideas on the spot are needed everywhere and in any field that you can think of.

Also it is not a bad idea to have connections to people that were interested in the topic so much that they were ready to participate in an event about it. There might be a need for a good employee in the organization that you represent or in the partner companies you organized the event with. A first job even if it is just a part time job could mean the world for a student or unemployed and why not someone how's thinks about changing the field they work in.



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### 4.3. Event follow-up

To gather useful information of the participants' opinions and experiences after the event, it is a good practice to give out a questionnaire covering all essential aspects of the event. Aim to get honest opinions of what everyone thought went well or worse. The more questions you have, the more information you can gather from the answers, but participants might not be interested in filling out very long questionnaires.

The questions should also be relatively short. Yes or no questions, or numeral scales for rating different features require the least effort from participants, and small text boxes for short written answers leave room for voluntary verbal answers. You could also leave an open word box at the end of the questionnaire, so that those willing to give more feedback are able to elaborate.

One thing to be taken into consideration is that if the event has lasted over the weekend or even longer, it might not be the best idea to give the questionnaire right after the event ends. At the end of a longer event the participants might be tired and possibly sleep deprived, so the answers might not be that thought out. On the other hand, you shouldn't wait too long to send out the questionnaire.

Feedback from the organizing parties and everyone who worked to bring the event to life can be also collected through questionnaires, but actual debriefing sessions can be more fruitful. A debriefing could be held right after the event and the observations could later be compared to the results of the participant questionnaire.

Following is an example of a questionnaire prepared for to gathering feedback from participants. This can be one of the main tools for organizational evaluation of the entire event. Based on the results obtained, each subsequent event may be characterized by better adaptation to participants and higher quality.

### Iterative development process in BalticSatApps.

All the winning teams and teams that were interested to move forward with their idea after short-term events were given the opportunity to take part in iterative development process. Although some of the short-term events had the opportunity to summit also innovative ideas and not only technical solutions to the challenges it came very clear that because Earth Observation was either part of all the challenges or just one challenge in the short-term events the solutions provided by the participants were technical and some cases highly technical with well thought business side also. This fact reduced the need for Iterative development process on the technical and business side in many cases when the ideas from short-term events were moving forward for example to Accelerator Programs.

## BalticSatApps Hackathon 2019, Cracow

The questionnaire used in the hackathon is presented below. The survey was preceded by an introduction thanking for participation.

### Question 1: What was your decision to participate in Hackathon? (required and multiple choice)

distribution of answers

The possibility of making new friends.	6.4% (10)
Willingness to learn new tools and technologies.	62.3% (38)
Willingness to establish cooperation with the environment focused around the subject.	14.8% (9)
The opportunity to win prizes.	14.8% (9)
A search for inspiration.	29.5% (18)
The opportunity to face unique challenges.	47.5% (29)
Other (open answer).	8.2% (5)

### Question 2: How did you find out about the event? (required and single choice)

Through Facebook.	6.4% (10)
Through the BSA project website.	62.3% (38)
Through posters.	14.8% (9)
Other (open answer):	
Academic teachers:	29.5% (18)
Friends:	47.5% (29)
Organizers:	8.2% (5)

### Question 3: How do you rate the individual components of the event? (required and assess each answer)

(1 = very bad, 2 = bad, 3 = average, 4 = good, 5 = very good):

	answer
	average
Registration process	4,5
Agenda of the event	4,1
Technical organization of the event	3,9
Introductory lectures on the event	4,1
Assistance from support staff	4,4
Overall assessment of the event	4,2

Question 4: How do you assess the availability of satellite data? (required) (from 1 to 5, where 1 = very bad, 5 = very good)

Average result 3,9

Question 5: What data sources did you use in designing and developing the solution? (required, open question)

Copernicus Open Access Hub	48
Sentinel Hub	8
Mentors	4
ESA	3
EUMETSAT	3
BDOT	2
Geoportal	2
Index DataBase	2
NDVI	2
Not specified / Internet	10

Question 6: Has participation in the event increased your interest in satellite data processing?

(required) (from 1 to 5, where 1 = definitely no, 5 = definitely yes):

Average result 3,7

Question 7: Do you have any comments or suggestions for the event? (open question)

19 suggestions were made, related to:

- time for work and presentation of the solution
- task topics
- WiFi problem
- event timeframe

Question 8: Age (required, open question)

Average result 23,3

Question 9: Year of studies (required, open question)

distribution of answers

The first year of study	3,3%	(2)
The second year of study	11,5%	(7)
Third year of study	14.8%	(25)
Fourth year of study	29.5%	(10)
Fifth year of study	47.5%	(11)
After studying / working	8.2%	(6)

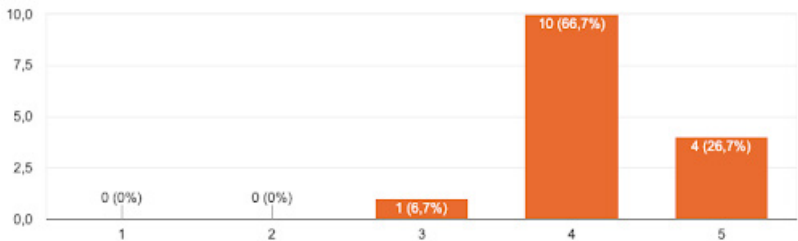
## BSA 7-day online Hackathon: Satellite Data Challenges

As with previous events, a feedback survey was prepared. Some of the results are as follows:

1. How would you rate the access to satellite data?

1 - bad access

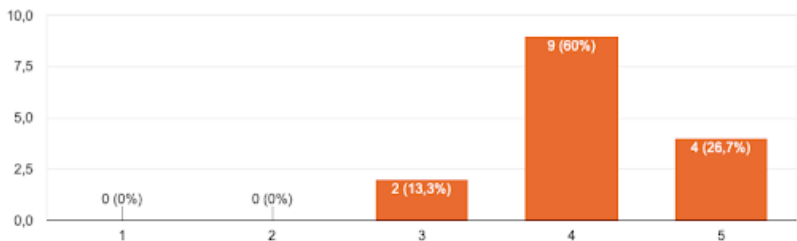
5 - very good access



2. Has participation in the event increased your interest in the subject of satellite data processing?

1 - not at all

5 - very much



### 3. Do you have any comments or suggestions for the event?

Important excerpts from the comments:

- “Later hours of events if the event is during work days.”
- “It was a little too long for me. A week is a lot of time to get mentally tired and at the end I lacked motivation.”
- “I think that more ideas would arise if the participants were provided with a high-resolution satellite data sample for the event”
- “Personally, I prefer 24-hour events on site, I hope that this event will take place next year :)”

Conducting the survey allowed for the following conclusions:

- Duration for hackathon should take max. 4 days
- Hours, we assume that – our participations are busy (working/studying) and we should start afternoon about 17:00 do 21:00
- Online hackathon should have hybrid option. And should take two days.
- One application for communications and presentations.

## Agenda for BSA 7-day online Hackathon: Satellite Data Challenges

Course of the event:

### Day 1

Welcome, lectures introducing the processing of satellite data from the Copernicus platform. Lectures should last up to 30 minutes. Finally, the plan of the event should be presented.

Every day at the INFO ROOM (#slack channel) in which at least one person from the mentor group is available.

This person helps to solve technical problems and/or directs participants to an appropriate mentoring in substantive matters.

### Day 2–6

Each project day is divided into 3 blocks:

INFO ROOM,

Workshops – our mentors show hackathon participants how to use Copernicus data,

Mentor hours – each team can have a meeting on the slack with a selected mentor.

### Day 7

The course of the final day:

time to sent the presentations,  
 presentations (5 minute presentations, 10 minute question time from mentors),  
 after the presentations – a meeting of mentors takes place to select the best project,  
 announcement of results,  
 thanks – online joint photo.



# 5. Appendices

## 5.1. References

Rosell, Bard & Kumar, Shiven & Shepherd, John. (2014). Unleashing innovation through internal hackathons. 1-8. 10.1109/InnoTek.2014.6877369

Chounta & Manske (2017). “From Making to Learning”: introducing Dev Camps as an educational paradigm for Re-inventing Project-based Learning

Malve-Ahlroth, Lankiniemi, Knuutila & Virta (2019). Innovation camp manual

Gama, Alencar, Calegario & Neves (2018). A Hackathon Methodology for Undergraduate Course Projects

Trainer, Chaihirunkarn, Kalyanasundaram & (2014). Community Code Engagements: Summer of Code & Hackathons for Community Building in Scientific Software

	18.06.2020	19.06.2020	20.06.2020	21.06.2020	22.06.2020	23.06.2020	24.06.2020
	THURSDAY	FRIDAY	SATURDAY	SUNDAY	MONDAY	TUESDAY	WEDNESDAY
16:00							
11:00	<b>INFO ROOM</b> The organizers events available on the Slack platform	<b>WEBINAR</b> Webinar: UML 1188	<b>INFO ROOM</b> The organizers events available on the Slack platform	<b>INFO ROOM</b> The organizers events available on the Slack platform	<b>INFO ROOM</b> The organizers events available on the Slack platform	<b>INFO ROOM</b> The organizers events available on the Slack platform	<b>DEADLINE FOR UPLOAD HACKATHON PROJECTS</b>
12:00		<b>WEBINAR</b> KASA KASA ADVISOR					15:30
13:00		<b>INFO ROOM</b>					
14:00							
15:00	<b>START 15:00-17:30</b>		<b>MENTORS HOURS</b> MENTORS AVAILABLE ON DEDICATED SLACK CHANNEL	<b>MENTORS HOURS</b> MENTORS AVAILABLE ON DEDICATED SLACK CHANNEL			<b>KETNOTES</b> 15:30 - 17:30
16:00	<b>WEBINAR</b> 16:30						
17:00	<b>WEBINAR</b> 17:30 SUMMUNITY	<b>WORKSHOP</b> Speaker event 16:00 - 17:30	<b>MENTORS HOURS</b> 15:00-17:00	<b>MENTORS HOURS</b> 15:00-17:00		<b>WEBINAR</b> 17:30 PAPER PRESENTATION TECHNOLOGY	<b>END</b> 17:30
18:00		<b>MENTORS HOURS</b> MENTORS AVAILABLE ON DEDICATED SLACK CHANNEL			<b>MENTORS HOURS</b> MENTORS AVAILABLE ON DEDICATED SLACK CHANNEL		
19:00							
20:00		<b>MENTORS HOURS</b> MENTORS AVAILABLE ON DEDICATED SLACK CHANNEL			<b>MENTORS HOURS</b> MENTORS AVAILABLE ON DEDICATED SLACK CHANNEL		
21:00							

## 5.2. Schedules

Previous page: Schedule for BSA 7-day Online Hackathon

Next page: Schedule for BSA Hackathon 26.-27.04.2019 in Cracow

## 5.3. Posters

Pages 54 & 55:

Poster for WeSeaChallenge Data training day, 30 October 2019 in Turku and Helsinki

Poster for WeSeaChallenge competition, 2019

Pages 56 & 57:

Poster for ActInSpace 2018 - BalticSatApps challenge, Cracow, 25.05.2018

Poster for BSA-Spectator Workshop 09.12.2019 (Polish version)

Poster for BalticSatApps Hackathon, Cracow, 26-27.04.2019

## 5.4. Miscellaneous products

Page 62

T-shirts from BalticSatApps Hackathon, Cracow 26-27th April 2019

Pen design used during short term events Material bag BalticSatApps Hackathon, Cracow 26-27 April 2019

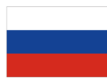
Mug design BalticSatApps Hackathon, Cracow 26-27th April 2019

## 5.5. ID badges

Page 63



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## **HACKATHON AGENDA, KRAKOW 26-27.04.2019:**

### **AGENDA:**

#### **26.04.2019**

place: Działownia 1/15

**8:00 – 9:00** Welcome and registration for participants

**9:00 - 9:20** About hackathon: Piotr Szuster

**9:20 - 9:40** Copernicus Data: Piotr Szuster

**9:40 - 10:10** The possibilities of using Copernicus data: Martyna Gatkowska

**10:10 - 10:40** Accessing Copernicus Data and Processing Tools: Ali Nadir

**10:40 – 11:00** Coffee break

**11:00 – 11:30** Methods of remote sensing in the estimation of damage caused by Bow Echo August 11, 2017: Artur Surowiecki

**11:30 - 12:00** How to make presentations that stick: Sonia Bazan

**12:00 - 12:30** Methods of pre-processing and integration of spatial data in SkyPredict 3: Piotr Szuster

**12:30 – 13:30** Lunch

place: Institute of Information Technology

**12:30 – 16:30** Workshop Lupa & Bazan

**16:30 - 17:00** Supper

**17:00 – 21:30** Work in teams

#### **27.04.2019**

place: Institute of Information Technology

**9:00 – 11:00** Work in teams

Działownia 1/15:

**11:00 – 11:30** Coffee break

**11:30 – 14:00** Presenting project

**14:00 – 15:00** Lunch

**15:00 – 15:30** Project evaluation

**15:30 – 16:00** Announce a contest winner, awards ceremony, ending the event

Please note that the schedule is subject to change.

Welcome to WebSeaChallenge – Data Training Day!

Date: Wednesday, 26th of October 2019

Time: 8:30–13:00

Place: Spärklip, Turku (T:yläkatkanta 4 B1) - Meeting room: Siba (2nd floor)

The program is produced and presented by Finnish Meteorological Institute (Jouko Lehto) and the University of Turku, department of Geography (Taru Jyöskölä maantieteen laitos).  
And the final presentation is by Unistadeno / Regional Council of Southwest Finland (Väinö Saarela).

Agenda:

- 8:30-9:00 Registration and breakfast
- 9:00-9:30 Introduction to satellite imagery, data and access
- 9:30-10:00 Introduction to APIs to access Copernicus data
- 10:00-10:45 Satellite image processing using SNAP (Standard Application Platform)
- 10:45-11:00 Coffee break
- 11:00-11:45 Satellite image analysis with Python geospatial ecosystem
- 11:45-12:30 Access and processing marine geospatial data using QGIS
- 12:30-13:00 "Lounastieto" regional geospatial open data

The session is also streamed and recorded so you are able to attend from distance!

<https://www.youtube.com/watch?v=269595E2ZT>

You can ask questions via stream chat.

P.S. There is no separate registration to the event.

The event is partly financed by the European Union through Interreg Baltic Sea Region program.



Have a nice weekend!  
Kalle Lehto and Tero Heikkinen





# WeSeaChallenge

Save the Baltic Sea and race for 8 500 euros

The Baltic Sea is under extreme environmental stress caused by unsustainable use of its resources. We can change this by sustainable planning and decision making, based on accurate and up-to-date environmental data.

WeSeaChallenge is a competition, where you can submit your idea on how to apply open geodata and use it to more efficiently achieve Baltic Sea sustainability goals.

There are three challenge categories to choose from. Your proposal can be either a concept or a technical prototype. No programming skills are needed. The prize pool for the best ideas is 8 500 euros.

## CHALLENGES:

### 1. Sustainable aquaculture - 4 000 €

Environmentally friendly operation of fish farming requires up-to-date data. Propose a way to collect, analyze or react to changing environmental conditions and impacts of fish farming operations.

### 2. Sustainable urban planning - 2 000 €

Urban impact to coastal waters is a matter of high importance. We are looking for data-centric solutions to improve the city planning and citizen participation.

### 3. Clean, productive and shared Baltic Sea - 2 500 €

Baltic Sea Challenge network implements environmental protection actions. Help this network to identify critical locations and coordinate their actions.

Register before 6.10.2019 and learn more: [www.balticsatapps.eu/weseachallenge](http://www.balticsatapps.eu/weseachallenge)

PRE-EVENT  
20th September

KICKOFF  
1st October

DATA TRAINING DAY  
30th October

MIDTERM REVIEW  
13th November

DEMODAY  
4th December



**SPACE 4.0**  
SOLUTION FROM THE SKY  
KONFERENCJA  
25 MAJA 2018



Hackathon #ActInSpace  
**WYGRAJ LOT**  
SAMOŁOTEM **ZERO-G**  
25-26 MAJA 2018

## WORKSHOP

Inteligentny monitoring Ziemi  
za pomocą satelitów programu  
Copernicus



KOTŁOWNIA  
GODZ.: 10:00-15:00



Interreg  
Baltic Sea Region

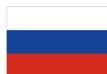


Politechnika Krakowska  
im. Tadeusza Kościuszki

Interreg  
Baltic Sea Region



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# HACKATHON

processing of satellite data

26-27.04.2019

Cracow University of Technology  
Warszawska st 24

Find a solution to some problems  
with the use of services  
based on access and processing of satellite data  
in the Baltic Sea region.

## CHALLENGES

- Friendly cities
- Education based on satellite data
- Application supporting the achievement of the Sustainable Development goals
- New solutions for the processing and analysis of satellite data
- Remote Sensing in Earth sciences

## AWARDS

Certificates

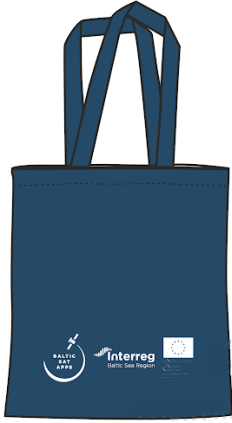
Invitation (I) and bonus points (II, III)  
to the acceleration program  
(Coordination - Krakow Technology Park)

VOUCHERS

(1st place award - 1500PLN 2nd - 1000PLN 3rd - 500PLN)

REGISTER YOUR TEAM

[WWW.BALTICSATAPPS.PL](http://WWW.BALTICSATAPPS.PL)

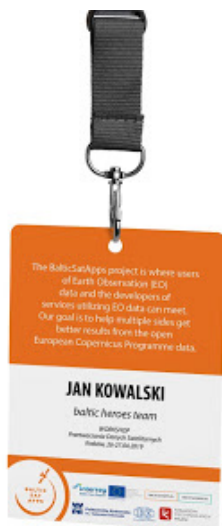


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## 5.6. Webpages and social media

WeSeaChallenge

<https://balticsatapps.eu/weseachallenge>

SpaceUp Acceleration Programme  
turkubusinessregion.com

<https://spaceupacceleration.com>

BalticSatApps Polish webpage

<https://www.balticsatapps.pl>

The screenshot shows the homepage of the Baltic Sat Apps website. At the top, there are navigation links: "AKTUALNOŚCI", "KOGO SZUKAMY", "PROGRAM AKCELERACYJNY SPACEUP", and "PROJECT PARTNERS MEETING". Below these are logos for "BALTIC SAT APPS", "Interreg Baltic Sea Region", and the "EUROPEAN UNION". The main heading reads "WORKSHOP 26-27.04.2019 (HACKATHON)" with the subtitle "Cracow University of Technology". A paragraph states: "The aim of the event is to find a solution to some problems with the use of services based on access and processing of satellite data in one of five determined challenges:" followed by a list:
 

1. Education based on satellite data
2. Friendly cities
3. Application supporting the achievement of the Sustainable Development goals
4. New solutions for the processing and analysis of satellite data

 An orange arrow icon is visible on the right side of the page.

The screenshot shows a news article on the Baltic Sat Apps website. The title is "popularnością cieszyła się kategoria 'Przyjazne Miasta'". Below the title is a horizontal bar chart titled "number of teams" comparing the number of teams in different challenge categories. The categories and their approximate team counts are:
 

Challenge Category	Number of Teams
Education based on satellite data	~10
Friendly cities	~25
Application supporting the achievement of the Sustainable Development goals	~5
New solutions for the processing and analysis of satellite data	~10
Remote Sensing in Earth Sciences	~10

 The text below the chart states: "Pierwsze miejsce zajęła drużyna **Neutral face emoji**, która zaprezentowała ideę **Coastal areas & marine monitor** dotyczącą monitorowania dzikich wysypisk i zwalczania problemu zanieczyszczenia regionów nadbałtyckich, szczególnie zwracając uwagę na wagę globalną tego problemu również w innych częściach świata." On the right side, there is a section titled "ROZPOCZĘCIE PROGRAMU" with a list of events:
 

- Space Business Model Workshops - kwiecień 2018
- Space Business Day - maj 2018
- Hackathon Space-Tech do I edycji - maj 2018
- Rekrutacja do Programu Akceleracyjnego - październik/listopad 2018
- Warsztaty na krakowskich uczelniach - 19 października 2018
- CopernicusHERO - Hackathon Copernicus (warszawy) oficjalny hackathon przerwania danych satelitarnych - 9 listopada 2018
- Start I programu akceleracyjnego - 22 listopada 2018
- Zakończenie I programu Demo Day -

 An orange arrow icon is visible on the right side of the page.



Selected Facebook post about organized Workshops, Hackathons and short term events in Poland (<https://www.facebook.com/BalticSatAppsPoland/>):

 **Baltic Sat Apps** dodał(a) wydarzenie.  
29 listopada 2019 · 🌐



[www.spectator.earth](http://www.spectator.earth)  **SPECTATOR**    **Politechnika Krakowska im. Tadeusza Kościuszki** [www.balticsatapps](http://www.balticsatapps)

**PON., 9 GRU 2019**  
**Inteligentny monitoring Ziemi za pomocą satelitów**  Zainteresowany(a) ▼

 Daniel, Paweł i 3 znajomych

---

**38** Liczba odbiorców      **4** Aktywność     

 2



Dzieje się 🇺🇸



Dzień drugi walki trwa 🇺🇸

Tym czasem mam dla Was małą migawkę z wczorajszej pracy 😊



**Baltic Sat Apps**  
Opublikowane przez: Adrian Widlak [?] · 3 grudnia 2019 ·

Jesteśmy na Crossweb! Zachęcamy do zapisania na nasze wydarzenie i wzięcia udziału w workshopie. Widzimy się już w poniedziałek 9 grudnia! <https://crossweb.pl/.../inteligentny-monitoring-ziemi-za-pom.../>



CROSSWEB.PL

**Inteligentny monitoring Ziemi za pomocą satelitów programu Copernicus - Crossweb**

48

Liczba odbiorców

8

Aktywność

Promuj post

3



**KWI 26** BalticSatApps 2019 - Hackathon

Publiczne · Organizatorzy: Pietrek Szuster i inne osoby (3)

✓ Wezmę udział ▾

🕒 26 kwi 2019 o 09:00 – 27 kwi 2019 o 15:00  
około 11 miesięcy temu

📍 Politechnika Krakowska im. Tadeusza Kościuszki  
ul. Warszawska 24, 31-155 Kraków

Pokaż mapę



**Baltic Sat Apps** zaktualizował(a) swoje zdjęcie w tle.

Opublikowane przez: Dominika Głowczyk [?] · 27 września 2019 ·



51

Liczba odbiorców

3

Aktywność

Promowanie niedostępne

2

👍 Lubię to!

💬 Komentarz

➦ Udostępnij



Myślisz, że Hackathon to tylko programowanie ?

Nic bardziej mylnego 😊

Nasze wydarzenie jest dla ludzi z wyobraźnią 😊

Pozwól sobie wygrać !



**NIE MUSISZ PROGRAMOWAĆ**

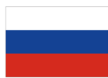
**WYSTARCZY DOBRY POMYSŁ  
ZAPREZENTUJ GO I WYGRAJ!**



1 komentarz



EUROPEAN UNION  
EUROPEAN  
REGIONAL  
DEVELOPMENT  
FUND



WITH FINANCIAL  
SUPPORT OF THE  
RUSSIAN  
FEDERATION



Jeszcze pare minut i oficjalnie startujemy 🤗



 Paweł Kisielewicz

 Lubię to!

 Komentarz

Mamy zwycięzców 🏆🏆

W imieniu Organizatorów :

Gratulujemy i życzymy dalszych sukcesów 🏆



  Ty, Paweł Kisielewicz, Mateusz Nytko i 4 innych użytkowników

 Lubię to!

 Komentarz