# TAILOR Hackathon user guide

## Rationale

The purpose of TAILOR project is to build a strong academic-public-industrial research **network** with the capacity of providing the scientific basis for **Trustworthy** AI leveraging and combining learning, optimization and reasoning for realizing AI systems that incorporate the safeguards that make them in the **reliable**, **safe**, **transparent** and **respectful** of human agency and expectations.

As developing synergies and cross-fertilization activities between TAILOR partners and the wider industry are key success factors, a dedicated TAILOR work package (WP8 - Industry, Innovation and transfer program) is organizing the following activities :

- Theme Development Workshops with the objective to bring together key players and key AI researchers from specific industry sectors. Together they will contribute to the Strategic Research and Innovation Roadmap,
- **Hackathons** (2 or 3 days) and **challenges** (3 to 6 months) based on use cases provided by industry partners. These events will turn their results into proof-of-concepts, demos or services
- Spread research innovations from research to industry partners in and beyond the TAILOR network. Making sure that top challenges from industry get addressed by research, therefore bridging the gap between research, development, market and society.

**This document is intended to guide TAILOR partners willing to organize a Hackathon.**

## What is a Hackathon ?

The main goal of a Hackathon is to address one or many business problems in a short timeframe by involving multidisciplinary teams (see Teams section below).

It can be used to develop a proof-of-concept, to help define a Minimum Viable Product (MVP), to improve an existing product, to challenge the industrial partner strategy, to open channels for further recruitments and other networking motivations, to improve TAILOR's stakeholders visibility, building bridges between academia and industry, showing industrial partners innovative actions and research institutes willingness to transfer research results to tangible products, etc.

In order to organise a Hackathon, the industrial partner must provide one or more clear use cases. It could be a business need/stake/problem, with corresponding data. The data must be accessible and usable with current existing AI tools possibly with the signature of a temporary NDA (see section on Data set below).

The Hackathon event lasts up to 3 days and participants can be TAILOR members as well as non TAILOR members (research, industry and other institutions i.e., cities, regional authorities for example).

The profile of Hackathon participants depends on (i) the objectives of the specific event (recruiting young graduates and/or experts, communication efforts,...) and (ii) constraints on the data sets (NDA).

Depending on the available seats, priority for the participation is given to TAILOR's members.

## What are the prerequisites for a great Hackathon ?

Hackathons can be proposed by one or several industrial partners and selected by an ad-hoc Hackathon Selection Committee.

The organizing partner should come forward with a proposal containing at least the following information:

- One or several use cases with a clear definition and objectives (what is the practical challenge to be solved during the Hackathon?),
- Available data sets,
- A list of expected outcomes and results for the organizer and the participants,
- The preferred team composition and maximum number of team expected (regarding the time constraint it is recommended to limit the number of participants per team),
- Ideas, suggestions for one or two keynote speeches, and hands-on presentations/training of useful skills and/or tools,
- A proposed location (may be online),
- A coordination leader from the company, responsible for the organization of the event
- A team of organizers, the Organizational Committee, to support the coordination leader to guide the participants before and during the event,
- Not mandatory but welcome, a team of expert coaches, to assist the participating teams in specific useful fields, like software development, data science, machine learning, specific business domains of problems to be addressed during the hackathon, UX/UI design, business plans, growth hacking… These expert coaches ressources can come from the organizing partner, the other partners or organisations outside the TAILOR project,
- The coordination leader will be responsible for ensuring the availability of the needed resources (human resources, data, technical and logistical support,...). They can be from the organizing partner or any other organization,
- A schedule proposal (before, during and after the event itself),
- A jury of at least 3 members, available either partially or during the entire Hackathon duration but at least during the challenge presentation and the jury meeting at the end of the event.

## Use cases

One or several use cases are defined and proposed by the industrial partner(s). They should be concise, sharp, and ideally described in half a page.

The context will be defined, specific problems explained, customers' requirements gathered, expected users identified.

The big question that needs to be answered : What is the challenge to be solved during the Hackathon?

Here are things that make a great challenge:
- The challenge is something real that the team needs to deliver
- It's stated in a way that sounds inspiring - something to solve for
- It's clear and concise
- It includes a time frame together with a deployment agenda
- Its objective needs to be realistically addressed in the duration of the event.

Use cases descriptions should specify, but not mandatory (list to be validated, limited, expended…):
- a name
- a general area, and a specific scenario in that area,
- a motivation detailing why this use case is important,
- the Challenges, what are the key issues in implementing a solution to this use case?
- prerequisites for use (includes data sets)
- expected results: final outcomes,…

In order to give a general idea of possible use cases here is a list of examples of hackathons previously organized without any connection to the TAILOR project.
- Diagnosis of skin cancer
- How NBIC technologies can transform the insurance industry
- Improving mailing distribution chain with computer vision and digital tracking technologies

## Data sets
Data sets are also brought by the industrial partner(s).
- Relevance
    - must be in relation with the use case to be addressed
- Technical
    - Accessible
    - Exploitable (volume, format)
    - Validated
    - Cleaned
- Regulatory
    - Open or proprietary data (licensing)
    - Accessible/share-able to participants
    - Compliant with EU GDPR
    - Trustworthy (Be careful of potential biases and offensive contents for example, especially in images, text, speech and sounds.)

If some specific datasets are made available for the hackathon, it is usually useful to make a hands-on presentation about how to access and read the data and make an extensive EDA (Exploratory Data Analysis) to present these datasets, in addition to have experts in the business domains, and technical data science experts in order to assist the teams in understanding the provided data, put them in the context of the use cases, and extract meaningful features from it in order to make the most of it under the short time constraint of

the hackathon.

## Teams

Each team needs a good mix of competencies and origine (coming from industry, research institute, university, …). Diversity is key ! i.e.

- AI: Machine learning, Reasoning, Optimisation, Data Mining, Planning, etc depending on the challenge
- Trustworthiness issues (fairness, privacy, security, explainability, …)
- Business (marketing, sales)
- Dev
- UX/UI Design …

Each team should identify a team leader.

A process for team formation should be agreed:

- Will the teams be formed themselves in advance and register already completed?
- Will the organizer dedicate a specific time, either at the beginning of the hackathon or some days prior to the event, to allow project leaders and other participants to meet and make teams according to their interest, complementary skills and personal affinities?

Each team leader will pitch its project, the problem the team wants to tackle and the general directions they intend to follow, the day/week prior to the event, in adequation with the event schedule.

## Pitching session & deployment agenda

When the allotted time is up, each team presents the results of their work usually in a form of a pitch, including a deployment agenda of the proposed solution. Then, the hackathon's jury deliberate and choose the team that has best answered the problem raised.

The members of the jury should be a mix from the organizer company and external partners. It is recommended to mix the profiles but in any case, the jury must be familiar with the subject being addressed.

Generally, the selected projects are rewarded. This can take the form of incubation of the project that was launched during the hackathon, a financial reward to continue the project or even job offers when it is a company that organizes the hackathon for an audience outside the organization.

## Hackathon Selection Committee

A selection committee will be set up to receive and select the best Hackathon proposals submitted by TAILOR' partners. This committee includes up to six members: the WP8 leader, the task 8.2 leader, two industrial partners and two academic partners.

## Physical or online event

Priority is given to the organization of face to face events. But with the Covid crisis, plan B to go online should be considered. It is suggested to be ready for a hybrid approach.

See here an example of an online guide for hackathon.

Some video-calling spaces such as [Gather-town](#) let multiple people hold separate conversations walking in and out of those conversations.

For a physical or online event, it is very important that each team has its own "war room" to ideate, work together with their coach, without being disturbed or spied on by the other teams.

## Budget

- Lunches, dinners, coffee breaks
- Space rental costs should be avoided (e.g., using university/industry partner premises).
- Travel, accommodation and or compensation costs for invited speakers, expert coaches, users, jury members should be considered.
- Prize(s)
- Website, online infrastructure

At this point, TAILOR doesn't have any dedicated budget for hackathon organization.

Sponsoring by organizers or other partners should be considered.

## Proposal submission

Proposals will be selected following a light process with at least two submission deadlines per year.

The partner willing to organize a Hackathon will submit a proposal, if needed with the support of one of the Selection Committee members, using a dedicated application form (to be available soon) containing at least the following informations:

- Use Cases description
- Data sets to be used
- Agenda and Location
- Budget
- Jury members
- Teams
- Experts
- Not mandatory an elevator pitch video (max 90 seconds) presented by the organizing partner. Will also be used for promoting the hackathon and recruit participants.

All applications will be regularly reviewed by the Selection Committee who may decide to:

1. accept the proposal
2. provisionally accept the proposal subject to additional information or adjustments
3. request the merging of several proposals
4. reject the proposal

The reason for each decision will be detailed.


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