

ARCCATHON

ARCCathon Briefing

and General Terms & Conditions

What, Why, How, Who and Terms

Davos, September 1, 2022

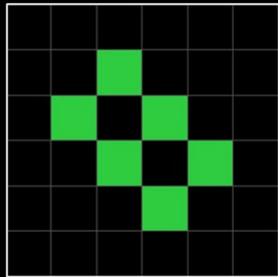


WHAT

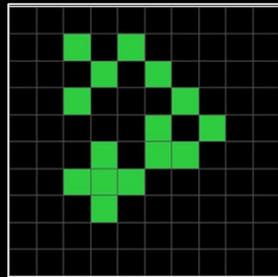
ARCathon is a Swiss competition between individuals, companies and institutions that promotes AI competence, strengthens team spirit, and makes hidden champions visible.

In a team of 2-5 people, you try to outsmart other teams in Switzerland while tackling a current world record in AI. In 2019, the ARC Challenge, an IQ test for artificial intelligence, was introduced. With 800 sample tasks, the goal is to program an algorithm capable of solving 100 tasks that are not open to the public. The current world record algorithm solves 29% of the secret test set.

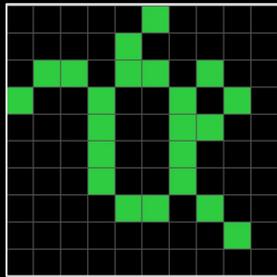
Example 1: **Input**



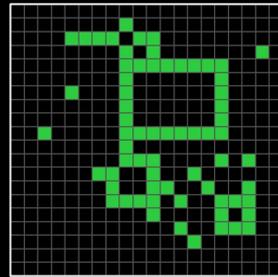
Example 2: **Input**



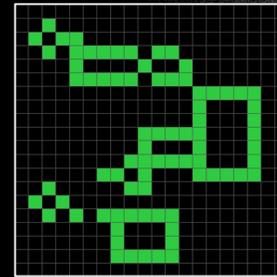
Example 3: **Input**



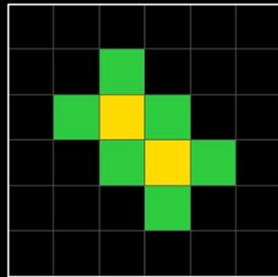
Example 4: **Input**



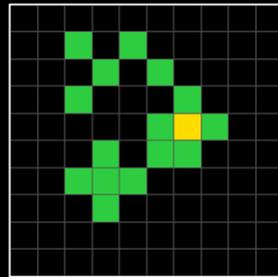
Test: **Input**



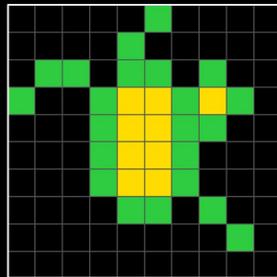
Example 1: **Output**



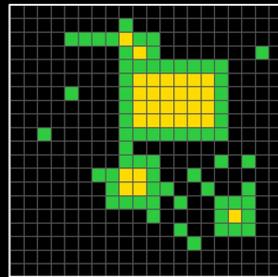
Example 2: **Output**



Example 3: **Output**



Example 4: **Output**



Test: **Output**

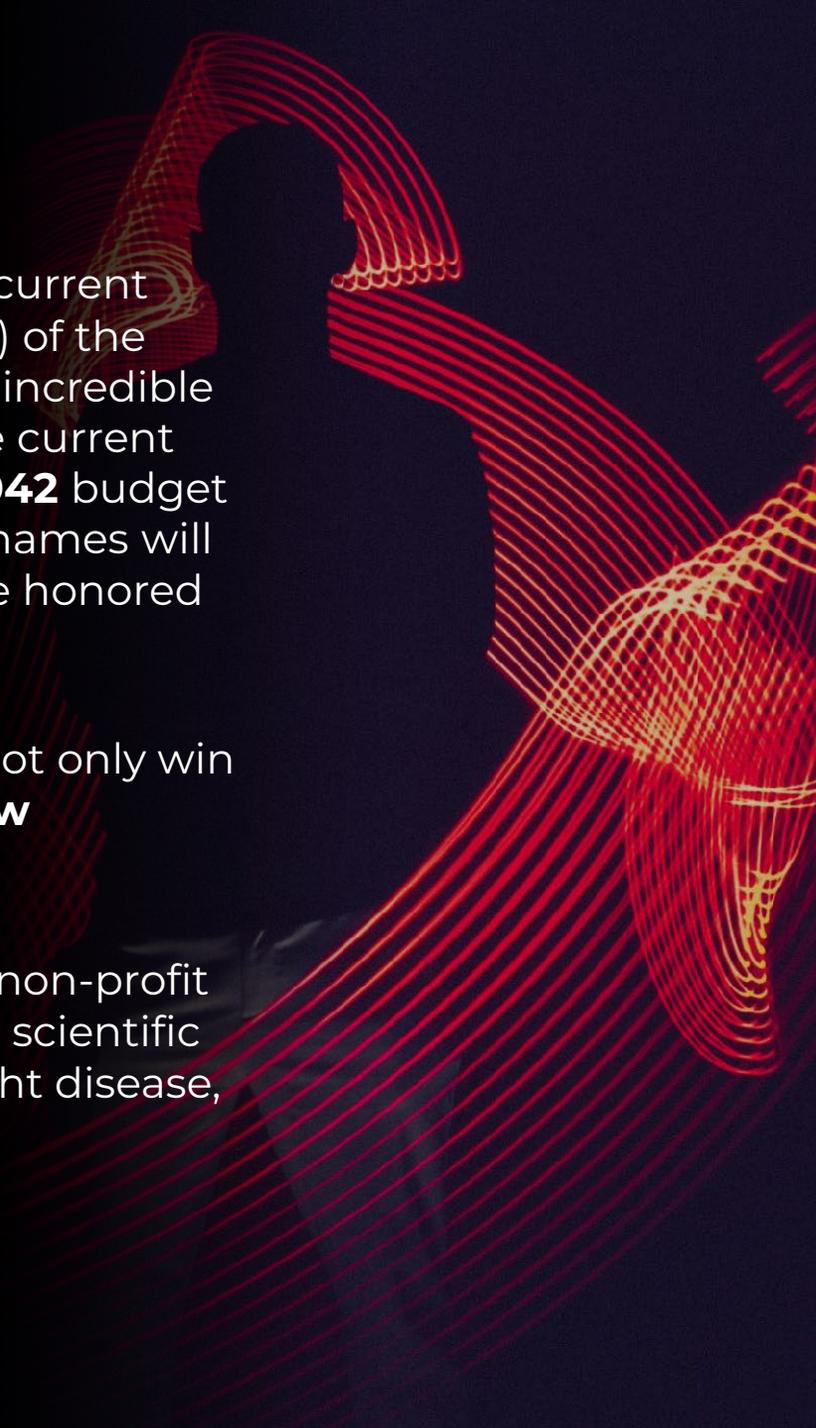


Purpose and what's in it for you

Win a team event budget: The ultimate goal is to both beat the current world record ("Milestone-30") and solve at least 42.0% ("Milestone-42") of the private test set with your program. The **top 3 teams** are invited to an incredible **team weekend in Davos**, expenses covered, given that they beat the current world record of 30.0%. The **best team** hitting doing so wins a **CHF 5'042** budget to throw an unforgettable party. If teams hit the **Milestone-42**, their names will forever be engraved in stone in the Davos mountains and they will be honored at the annual **Swiss AI Awards**.

Take AI to the next level: If you break the world record, you will not only win a fantastic prize, but you will also contribute to the **invention of a new generation of algorithms** capable of abstract thinking like humans.

AI for humankind: Lab42 is located in Davos and operated by the non-profit AI foundation Mindfire. Support the Foundation's mission to advance scientific progress in **human-level AI** research and develop AI that helps us fight disease, hunger, and environmental disasters. Learn more at lab42.global.

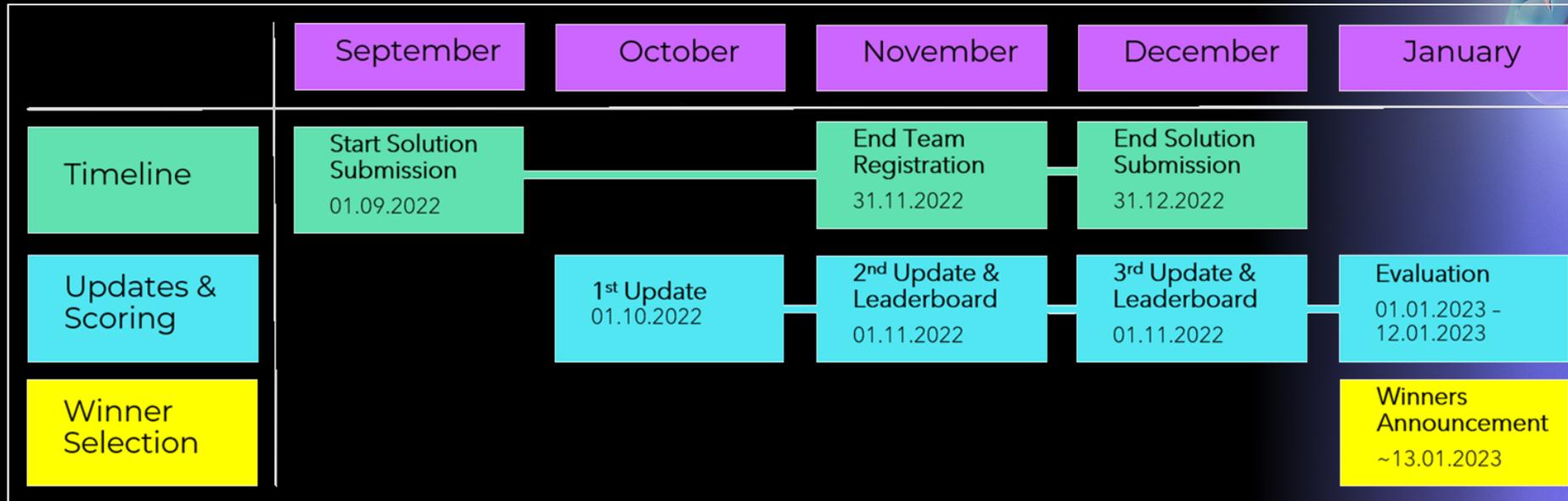
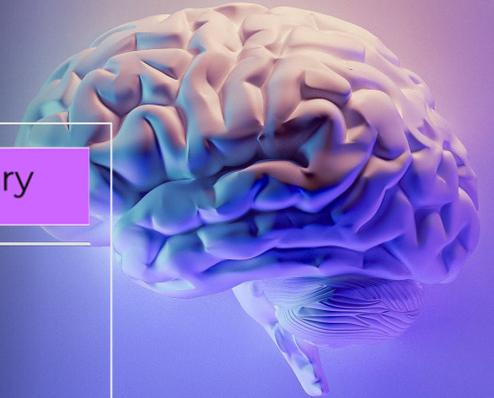


- 1. Form a team and appoint a team leader:** When uniting your brightest problem solvers, you stand a good chance of scoring better than your competitors. So far, no one has the blueprint to solve ARC, so the terrain is all yours. Show how creative you are as a team and solve more ARC tasks with your algorithm than other participants or organizations in your field.
- 2. Register your team:** Register your team online here: [Registration Form](#)
- 3. Do some practice:** Check out the ARC Editor and solve some tasks here: [ARC Playground](#). You can find possible first steps, computation rules, and the 800 training tasks on our Website: [ARCathon Resources](#). For regular updates, tips & tricks, and Q&A sessions, please check the respective box in the registration form or contact us at arcathon@lab42.global for technical questions.
- 4. Create your algorithm and hand it in for scoring:** You find the submission rules and instructions on the competition website: [ARCathon](#). Throughout the competition, you can hand in up to 5 versions of your algorithm. The best-ranking version will be on the leaderboard. Feedback on the performance with the private test set is usually obtained within 10 days after submission. All communication is done via the team leader. The rankings will be displayed on the public online leaderboard starting in mid October, 2022.
- 5. Check the leaderboard and final ranking:** Final rankings are published around January 15, 2023. The 3 best ranking teams will be informed and invited to an award ceremony on January 20, 2023, in Davos or online (remote participation is possible).



Overview: Registration is open and **Submissions** are accepted from **September 1 to December 31, 2022**. Practice- and Q&A sessions can be requested in the registration form or via arcathon@lab42.global. If you have any questions regarding ARCathon, contact us at arcathon@lab42.global or find your personal contact on the last slide.

The best three teams are rewarded on the day of the winners announcement, January 13, 2023. If the best team hits Milestone-42, they will be invited to the annual Swiss AI Award, where they will be honored by the jury.



Meet the Jury



Benjamin Grewe

Professor in Neural Systems at ETH and University of Zurich



François Chollet

Winner Swiss AI Award, Senior Engineer at Google, Author of Keras



Brigitte Sommer

Legal attorney, Jury member of the Digital Economy and Swiss AI Award



Thilo Stadelmann

Professor & Director of Centre for AI, ZHAW School of Engineering

Legal notice: Each jury member abstains in case of a possible conflict of interest and treats all applications strictly confidential. All intellectual property rights remain with the applicant and are safeguarded by the non-profit Mindfire Foundation. Lab42 is mandated to run the ARCathon with Francois Chollet as the host of the 2022 ARCathon competition. All participants agree to the [terms & conditions](#), including the respective privacy policies, by confirming that they have read and accepted them. More information can be found here: www.lab42.global/arcathon.

Meet the Organizers



Oliver Schmid

Head Community & Lead ARCathon



Hansueli Jud

Head Technical Evaluation



Abigael Becirovic

Community



Rolf Pfister

Head Lab42



Marcel Blattner

Tech & Community



Pascal Kaufmann

President Mindfire

Get in touch



Oliver
Schmid

Head
Community

Your contact:

✉ oliver.schmid@lab42.global

For general questions about the competition:

✉ arcathon@lab42.global

General Terms and Conditions ARCathon 2022

1. ARCathon 2022

1.1. The international ARCathon competition is organized by the Mindfire Foundation, c/o Sielva Management AG, Gubelstrasse 11, 6300 Zug, Switzerland (CHE- CHE-142.155.301), further referred to as “the organizer”. The Mindfire Foundation is a Switzerland based not-for-profit organization dedicated to further progress in Artificial Intelligence research. Participation in the selection process, competition or its events is free of charge for all participants.

1.2. ARCathon honors outstanding individuals, companies and institutions (companies and institutions together: ‘organizations’). It distinguishes the most creative and transdisciplinary teams, making hidden champions and expertise in AI visible.

ARCathon challenges participating teams with fundamental questions: How can a new generation of algorithms keep up with human-level intelligence? What does it take to achieve human-like reasoning and abstraction?

1.3. During a several months registration and scouting process, the most promising teams are searched for and invited to ARCathon. The Award ceremony usually takes place after a 4-6months application and submission process, preferably in December. Applications for the award is possible only upon completing the dedicated registration process via the public website: lab42.global.

2. Patronage and jury

2.1. ARCathon is a competition under the patronage of the Mindfire Foundation, represented by Lab42, domiciled at Obere Strasse 22B, 7270 Davos Platz, Switzerland, or an assigned representative.

2.2. The four jury members and the host of ARCathon 2022 are:

- François Chollet

Host and jury member, independent

- Pascal Kaufmann

Host, representing the Mindfire Foundation

- Prof. Dr. Benjamin Grewe

Jury member, representing the Institute of Neuroinformatics (INI) at ETH Zurich

- Prof. Dr. Thilo Stadelmann

Jury member, representing the AI Centre of the ZHAW School of engineering

- Brigitte Sommer, Lawyer, jury member, independent

2.3. Project office is operated via arcathon@lab42.global, Obere Straße 22B, 7270 Davos Platz, Switzerland

3. Eligibility and registration process

3.1. Applicants are eligible as individuals who have been confirmed by Lab42 and who comply with the respective policies and terms.

3.2. Applicants will only be considered for the ARCathon award if they complete the registration and submission process as part of ARCathon.

3.3. All material and information submitted must (a) describe original work, (b) not contain fabricated or false information. If existing solutions are to be integrated, the references and the corresponding recognition must be explicitly stated.

3.4. Further requirements are:

f) Applicants are individuals or personally represent their organizations.

g) In the case of a company, the legal form is an AG (PLC) or GmbH (LLC). Headquarters can be located worldwide and outside of Switzerland.

h) In the case of a registration as an organization, at least half of the applicants in a team must be employed or contracted by the same organization of at least 50% work contract

(“50% requirement”) or be a member or a student of the represented organization (students of colleges, gymnasiums, universities are explicitly included). External team members may join a team as long as the 50% requirement is met. The organizer reserves the right to conduct an active match making to suggest individual applicants to registered teams. Interested individuals are requested to contact: arcathon@lab42.global.

3.6. There are no restrictions in terms of age or nationality in the case of private individuals. In case of an organizations, maturity stage, founding date or history of the represented organization does not impact eligibility.

3.7. Amendments: The ARCathon hosts or jury members may unilaterally amend terms and selection criteria by means of a majority decision that needs be taken in writing (e-mail is sufficient). Participants will be noticed by e-mail in case of substantial amendments.

3.8. Submission and selection process: The selection process is structured along 3 stages and coordinated by the organizer.

(1) Stage-1 (“Application stage”): Teams are encouraged to register during a time period starting on September 1, 2022, and ending by November 30, 2022. In case of doubt, the project office will approach applying teams and ask for the latest documentation such as evidence on employment status, domicile and further details about participating organizations. Otherwise, teams are confirmed and are cleared for submitting algorithms.

(2) Phase-2 (“Submission Phase”): Teams will be invited to submit their algorithms during a period between September 1, 2022, and December 31, 2022, by 23:59 CET. The ranking of submitted algorithms will be based on the material provided, as well as additional research and conformance testing that may or may not be performed by the assigned judges. The “Submission Rules and Instructions” document, available online at <https://mindfire.open-social.site/event/arcathon>, is binding, and submissions may be rejected if the submission and computation rules are not followed or are not consistent with them. All applicants are

sorted in a ranked list showing the percentage of correctly solved tasks of the undisclosed "private test set". Ranking is based on a binary decision of whether or not the output was correctly generated by the submitted algorithm. Up to 3 versions of algorithms (executable programs) can be submitted, and the best ranking will be published on the leaderboard with the respective team names. No personal data will be disclosed without the explicit prior consent of the team leader. Feedback on performance on the private test set is usually returned to the team leader within less than 10 days of submission. All communication will be through the registered team leader. Beginning September 1, 2022, and upon 5 or more valid submissions are accepted, rankings will be listed on the public leaderboard, which can be accessed at <https://lab42.global/arcathon/>.

(3) Stage-3 ("Winner selection stage"): Final rankings are published on January 13, 2023. The 3 best ranking teams will be informed and invited to the ARCathon award ceremony taking place within 60 days after the winner announcement (remote participation is possible). Jury board members are presented the top 10 performing algorithms. The decision on the winner is taken based on the rankings (percentage of correctly solved ARC tasks). In case of dissent or equal ranking, a deliberation and resolution call is taken until the top-3 teams are selected and the winner nominated by majority vote. Minutes shall be taken of this convening of the entire jury.

3.9. Novelty and uniqueness: Algorithms based on ideas that have already been implemented in identical or similar fashion, or that do not differ from an already implemented idea in any significant aspect, may be excluded from consideration by the jury based on a first-to-file basis.

4. The jury decision board and indemnification

4.1 The independent jury (the jury board) constitutes itself. The jury consists of nominated representatives, proven AI experts with sound scientific and research backgrounds, as well as experienced jury members of existing AI or digital

economy awards and external ad hoc partners. The jury is chaired and coordinated by one of the jury members, who is elected by simple majority vote. For the first edition of ARCathon 2022, the presidency for the first term will be held by a representative of the Mindfire Foundation. The presidency can be extended by simple majority vote.

4.2 The jury deliberates in closed sessions. The jury committee reserves the right to refuse to disclose personal information to an individual.

4.3 All decisions of the jury board regarding the award of the prize are final and binding, without appeal, with respect to all aspects of the ARCathon, including, but not limited to, eligibility and disqualification of applicants. The prize is subject to applicable federal, state and local law and is void where prohibited by law or regulation.

4.4 The jury board and individual judges will not be liable for

(1) incomplete or inaccurate information resulting from technical or human errors in the collection and/or processing of information

(2) the theft, loss, destruction or unauthorized access to, or alteration of, information

(3) any message or email from or to ARCathon or the Organizing Team not being received and/or for any application not being captured, recorded or received for any reason.

(4) any typographical or other errors in the offer or administration of this award, including but not limited to errors in advertising, these terms and conditions, the selection and/or announcement of the finalists or the winners; and

(5) any combination of the above.

5. Prizes and selection process

5.1 The jury will select three finalists. Rankings are calculated by means of measurement of the solution rates on the private (undisclosed) test set accessible to the Jury. Two

milestones are defined: i.) Milestone-30, quantifying a solution rate of at least 30.0% and ii.) Milestone-42, quantifying a solution rate of at least 42.0%. The best 3 ranked teams that achieved or exceeded the milestone-30 are invited to a 2 days team event in Davos, with all expenses paid for accommodation for one night, ski/mountain pass, fun activities, meals, and train tickets, at a date suitable to the respective team. The best team that exceeds the milestone-30 wins a budget of CHF 5,042, which is paid directly to the team leader (exclusive applicable VAT). If teams hit the Milestone-42, their names (team or individual names) are engraved in stone on a dedicated spot within or above the city of Davos, Switzerland. Rejection of such engraving due to anonymity is possible. In addition, the first-ranked team will receive a dedicated ARCathon trophy as well as media coverage in a tier-1 newspaper in Switzerland. The second and third placed teams will receive a certificate attesting to their top placement and providing a rationale for that placement.

5.2 No deferrals of awards will be allowed. At least one representative of the team must make themselves available to receive the award. Failure to be available will be considered a withdrawal of the application, unless special circumstances obtain.

5.3 Participants in the competition are not entitled to compensation for expenses of any kind.

6. Communication

6.1 The ARCathon competition will be followed by the media. Photos, videos, and contributions to events and the award ceremony will be published in the media and in various channels, such as on the [Lab42.global](https://lab42.global) and [Mindfire.global](https://mindfire.global) websites, newsletter and social media. Participants agree to such publications. The winners of the competition are entitled to mention their successful participation in the ARCathon in their own communications in the future.

RULES

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7. Data Protection and liability disclaimer

- 7.1 Participants grant the organizer the right to process their submitted data.
- 7.2 All ARCathon employees, named representatives, members of the organizing office, mentors, judges, experts at events, advisory board members and other persons involved in the competition who have access to confidential participant or business case-related data undertake to maintain confidentiality vis-à-vis the participants by means of a confidentiality declaration.
- 7.3 No participant, team or other data may be published or disclosed without the consent of the participants, except for the information intended for publication, i.e. the team name (which may be an alias).
- 7.4 The team members of the winners selected and confirmed by the ARCathon jury (the best 3 finalists) grant the organizer the right to record and publish a video about the team and its project.
- 7.5 Participants grant the organizer the right to share their contact details (team name, first name, last name, addresses, phone numbers, email addresses) with any of the jury members and the host for feedback and further communication.
- 7.6 The organizer and the jury members disclaim any liability for damages of any kind, in particular for damages caused by employees or auxiliary persons, in accordance with the provisions of Articles 100 and 101 of the Swiss Code of Obligations.
- 7.7 The organizer and Mindfire Foundation are not liable for the possible misuse of user data by third parties.

8. Ownership in IP and right to publish

- 8.1 Each ARCathon participant shall retain and have full ownership of his or her know-how and IP and any other IP-rights ("IP"), in each case whether registered or unregistered,

including the right to apply for intellectual property rights and the entitlement as such, namely inventions.

- 8.2 Upon registration as a team participating in any of the Lab42-challenges (namely ARCathon, ARCcreate) and accepting the participation terms, each participant grants to the Mindfire Foundation an unlimited, non-exclusive, sublicensable, transferable, perpetual, irrevocable, royalty free and fully paid up licence to safeguard, publish and further develop any submission and creation.
- 8.3 Mindfire maintains the right to publish and share any results at any given time and in accordance with the Mindfire's foundation purpose and regulations. Mindfire treats all Results with the utmost care and respect and seeks whenever and however possible consent of the respective IP owner before any publication.

8. Limitation of Liability

- 8.1 The Organizer reserves the right to cancel, modify or suspend ARCathon 2022 or any subsequent edition, or to change these conditions without prior notice or obligation, in case of accident, printing, administrative or other error of any kind or any other reason.
- 8.2 In the event of any inconsistency or contradiction between these Terms and Conditions and any statements or other representations in the ARCa-thon Materials, these Terms and Conditions shall prevail and apply to the fullest extent permitted by law. If for any reason, in the sole discretion of the organizer, an ARCathon edition cannot proceed as originally contemplated in these Terms and Conditions, or if the administration, security, fairness, integrity or proper conduct of this Contest is disrupted or impaired, including due to tampering, fraud or other causes beyond the control of the organizer or promoter, the organizer or promoter reserves the right to cancel, terminate, modify, amend, extend or suspend the contest, in whole or in part, at any time and without notice. Subject to applicable law and any necessary regulatory approvals, the organizer or promoter re-

serves the right to change the dates and/or deadlines specified in these Terms and Conditions without prior notice, to the extent necessary to verify compliance by applicants with these Terms and Conditions, or due to other problems or circumstances that, in the organizer or promoter's opinion, affect the proper conduct of the Contest as defined in these Terms and Conditions, or for any other reason.

- 8.3 The organizer or promoter reserves the right to exclude from this Contest and any future award programs or other promotions conducted by the organizer any person who, in its opinion, tampers with the entry process or the operation of ARCathon or violates these Terms and Conditions on any site, engages in unsportsmanlike or disruptive conduct, or harasses, abuses, threatens, or bullies any other entrant.
- 8.4 Any attempt by an applicant or any other person to undermine the lawful operation of Arcathon or any Arcathon affiliated website or sub-project is a violation of criminal and civil laws. Should such an attempt be made, the host and all affiliated employees and partners reserve the right to seek damages from any such person to the fullest extent permitted by law.

These Terms and Conditions were signed off by the jury and are valid without signature.