H2020 Grant Agreement No. 857125

D8.3 Open Calls Implementation Plan

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1 Executive summary

The continuous evolution of the agricultural sector also includes the incorporation and adaptation of the latest technologies. The Horizon 2020 project Agricultural Interoperability and Analysis System (ATLAS) is on the search for interoperability between agricultural machinery, sensors, and data processing services in order to increase productivity in a sustainable way.

ATLAS is an EU-funded project under the Horizon 2020 Framework Programme for Research and Innovation (Grant Agreement No. 857125). This project is being implemented by 30 partners from 7 European countries between 2019 and 2022.

The innovation hubs will make use of third-party funding through open calls according to T8.4 consortium’s proposal and the commission’s rules defined in article 23.7 of the H2020 Rules for Participation. Partner AZO will be responsible for the organization and execution of the open calls. The following paragraphs show a detailed implementation plan of the two ATLAS open calls.

1.1 Calls organization

ATLAS will publish the open calls widely through the defined dissemination and communication processes and adhere to Horizon 2020 standards with respect to transparency, equal treatment, conflict of interest and confidentiality. All calls for third-parties will be published on the Horizon 2020 Participants Portal, and on the projects' web site as well as promoted through social media channels. The calls will remain open for four months. If call deadlines are changed, it will be immediately being published on the call page on the participant's portal and all registered applicants will be informed of the change. ATLAS will establish an electronic submission system for proposals; all proposals will have to be uploaded through this system. The submission system will be closed after the deadline of the call. The evaluators will have access to the proposals through the submission system after the deadline and will be able to assess all the eligible proposals. The detailed information is available in the paragraph 3, page 7.

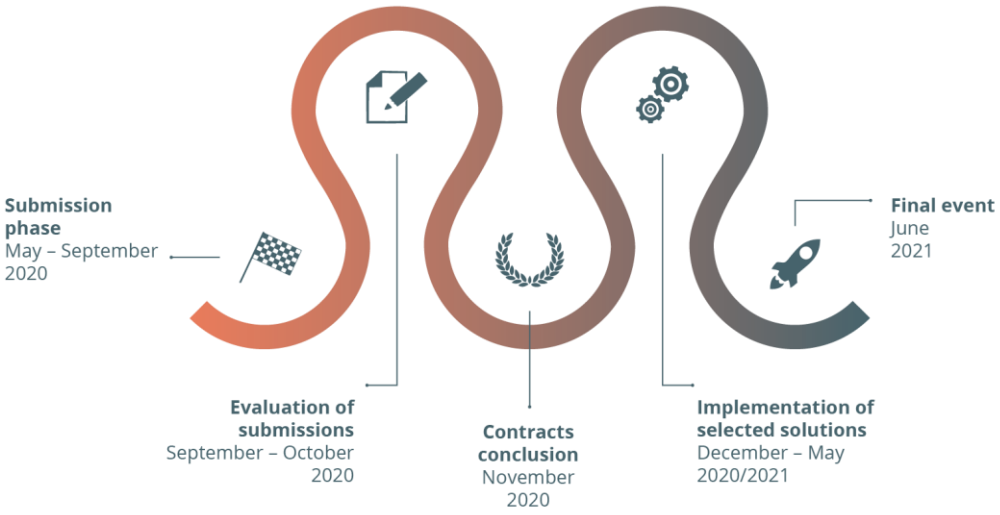

Figure 1: Open calls timeline

1.2 Call scope

ATLAS looks for proposals aiming for the development of new and innovative services by making use of the technical foundation the ATLAS platform provides. The proposed projects should show a clear value for either actors along the agricultural value chain or consumers. The work carried out in the projects will have a thematic focus on the development of services that build on and extend the use cases carried out within the ATLAS project. For each open call specific challenges will be defined. For more details refer to the paragraph 3.2, page 9 and in the Annex 3, page 42.

1.3 Target audience

The calls aim for incorporating innovative SMEs and innovative start-ups, as well as small and innovative technophile agricultural enterprises established and based in one of the EU Member States or an H2020 Associated country as defined in H2020 rules for participation. The applicants have a strong focus on data-driven agriculture, providing novel solutions to the agricultural community. Only single applicants shall be eligible to receive funding. ATLAS will provide seed funding to these companies, aiming for the formation of sustainable ecosystems around the innovation hubs. The detailed information on target audience and eligibility is available under the paragraph 5, page 22.

1.4 Financial support

Proposals submitted via the open calls shall be evaluated against the certain criteria which are detailed described in the Annex 2, page 32.

An average of EUR 52.500 will be allocated per use case to be supported via the Open Call. Each selected third party will need to contribute at least 30% of the cost to develop the use case, leading to a budget of EUR 75.000 per use case. For more information on the financial support for the open calls' beneficiaries see the paragraph 4, page 20.

1.5 Expected impacts

The ATLAS project aims to develop an open, distributed, and extensible data platform based on a microservice architecture. It will offer innovative, data-driven services in agriculture to help improve the efficiency of farmers in a sustainable way.

Through ATLAS and the new level of interoperability resulting from the ATLAS platform technology, it will be easier than ever before to connect to the relevant end-users and to integrate novel services into the workflows of these end users. The formed Innovation Hubs will be also utilised as dissemination points, further enhancing and amplifying the outreach of the project.

The ATLAS Innovation hubs are built with a critical mass of stakeholders involved, acting as an incubator attracting new companies providing services around data driven agriculture. The winners of the open calls will develop additional services complementary to the ones that are developed in ATLAS and will be available through the ATLAS platform. The ATLAS platform will be sustained through the EEIG and search for additional funding from venture capital and business angels to support the ecosystem of SMEs that will develop new services though the open calls.

In addition, successful participants will have the chance to become part of the ATLAS ecosystem and benefit from its extensive network of end users, service providers, researchers, and policymakers.

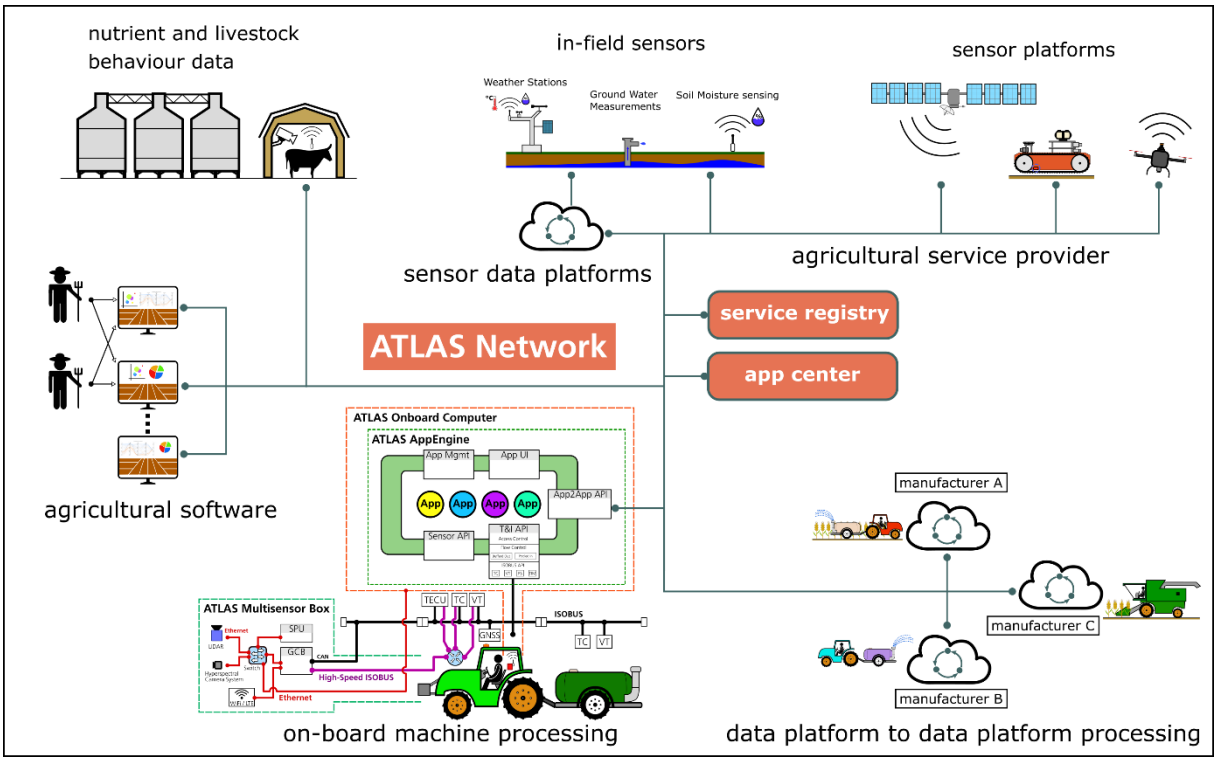

Figure 2: Areas for third-party services in the ATLAS project

2 Introduction

The overall objective of ATLAS is the development of an open digital service platform for agricultural applications and to build up a sustainable ecosystem for innovative data-driven agriculture using the platform. The platform will allow the flexible combination of agricultural machinery, sensor systems and data analysis tools to overcome the problem of lacking interoperability and to enable farmers to increase the productivity in a sustainable way by making use of the most advanced digital technology and data on their own. The platform will define a service architecture providing hardware- and software-interoperability layers which enable the acquisition and sharing of data from a multitude of sensors and the analysis of this data using a multitude of dedicated analysis approaches.

3 Open Calls Process and Coordination

3.1 Overview and Objectives

Partner AZO Anwendungszentrum GmbH Oberpfaffenhofen (AZO) is leading the open calls implementation task on behalf of the consortium. This task comprises all activities related to

the organization, execution and evaluation of the open calls. Partner AZO will manage distribution of EU funding in two rounds (2020 and 2021) within all Innovation Hubs which are built with a critical mass of stakeholders involved, acting as an incubator attracting new companies providing services around data driven agriculture.

The scientific and technical partners of the consortium will contribute with their expertise in reviewing and evaluating the proposals. Partner Fraunhofer will as coordinator decide the final selection of the beneficiaries.

Two open calls will be organized, the first batch of third parties to receive funding will be selected by M14 (November 2020), the second - by M27 (December 2021) (page 24). Within the context of the innovation hubs, ATLAS will provide funding through open calls to 10 – 20 European companies that offer novel and innovative services. The winners of the open calls will develop additional services complementary to the ones that are developed within the ATLAS project and will be available through the ATLAS platform. The ATLAS platform will be sustained through the EEIG and search for additional funding from venture capital and business angels to support the ecosystem of SMEs that will develop new services though the open calls.

The aim of the Open Call is to establish pilot studies aligned to agricultural use cases on the agricultural operations of the consortium's end user partners, and to establish the Innovation Hubs around these pilots to implement a sustainable ecosystem of innovative companies around these pilots. Partner AZO is responsible for the organisation and execution of the Open Calls on behalf of the ATLAS consortium.

ATLAS will publish the open calls widely through the defined dissemination and communication processes and adhere to Horizon 2020 standards with respect to transparency, equal treatment, conflict of interest and confidentiality. All calls for third parties will be published on the Horizon 2020 Participants Portal, and on the projects' own web site https://www.atlas-h2020.eu/. The calls will remain open for at least three months. If call deadlines are changed, it will be immediately being published on the call page on the participant's portal and all registered applicants must be informed of the change.

ATLAS will establish an electronic submission system for proposals (called further "Database"); all proposals will have to be uploaded through this system. The Database will be closed after the deadline of the call. The evaluators will have access to the proposals through the Database after the submission phase is closed.

3.2 Challenges

For each open call there will be specific challenges (Topics) defined. Applicants must submit their proposals for one of the topics. A given proposal may only be submitted once; in other words, the same proposal may not be submitted for several topics. However, an applicant may submit any number of proposals. If an applicant submits the same proposal for more than one topic, none of the proposals will be considered for funding.

For the first Open Call in 2020, there are the following seven challenges defined:

3.2.1 Topic 1: Weed and Pest Control

Weeds and pests are two major threats to agriculture. Conventional methods (pesticides, herbicides) harm the environment and are viewed critically by consumers. Better innovative methods of handling these threats are required.

3.2.2 Topic 2: Irrigation

Without a reliable irrigation management system, farmers face the risk of either under-watering or over-watering their fields. Under-watering can lead to reductions in yields, fruit size, and quality. Over-watering, on the other hand, can cause water wastage, soil erosion, spreading of pesticides and weeds, higher operational costs, and other problems. In light of the increased demand for water resources in today's world, reliable irrigation management systems are of the utmost importance.

3.2.3 Topic 3: Asset Tracking and Fleet Management

Modern agricultural businesses and farms are complex enterprises that need to not only keep track of their diverse assets, but also manage increasingly large fleets of vehicles and mobile machines. Such assets may include (but are not limited to) animal food, fertilisers, seeds, or even living animals, as well as harvests, various kinds of biomass, and other goods. In addition, farming businesses in particular deploy various tractors and other machines that typically come from many different manufacturers.

Since assessing the quantity and quality of imported and exported goods manually is growing increasingly difficult and imprecise with the advancing industrialisation of agricultural businesses, the problem of controlling farming materials to be imported or exported needs to be addressed by precise, yet robust sensing solutions. To estimate, account for, and optimise the costs of diverse vehicle fleets, hardware and software systems both have to be tailored to interface with real-life everyday agricultural operations. The collection and analysis of aggregated data from various sources allow for not only precise accounting, but the generation of insights and opportunities for effective optimisation, as well.

3.2.4 Topic 4: Efficient and Transparent Nutrient Cycle Reporting

For the sake of sustainability and environmental protection, farmers in Germany and other EU countries are required to keep track of and report the nutritional balance of their farms. However, keeping a record of incoming nutrients and outgoing produce and manure can be a time-consuming and tedious task that often requires a lot of paperwork due to receipts and other documents that are not available in digital formats.

3.2.5 Topic 5: Behavioural Analysis and Management of Livestock

Monitoring livestock numbers, growth, behaviour, and wellbeing is an important task for every farmer engaged in animal husbandry. Early detection of illnesses and other afflictions is key in administering precise medication. Since round-the-clock human supervision is not possible for larger numbers of animals, intelligent systems for monitoring livestock based on video and other sensor data need to be developed.

3.2.6 Topic 6: Information Platform for Farmers

Precision farming and digitalisation in agriculture is a trending topic all over the world. Right now, however, the up-front investments in new technologies are mostly only affordable for bigger agricultural enterprises, which may lead to pooling and imbalances in the distribution of knowledge and expertise in the areas affected. By contrast, small farming businesses may simply be unaware of affordable solutions for facilitating their operations and increasing efficiency.

For this reason, the simple propagation of basic knowledge and information on precision farming, digitalisation, and available equipment could contribute to quicker adoption of recent technological innovations by small and medium-sized farms. In effect, this could not only increase the profitability of small businesses and decrease environmental footprints over the long term, but also open up entirely new corners of the market.

3.2.7 Topic 7: Open Technology for innovative Agriculture

Technology trends like AI, 3D printing, or blockchain are emerging fast and the field of agriculture is finding it difficult to keep up. The goal of this call is to develop solutions for digital agriculture that make use of the most recent technology developments. The proposals submitted should provide new impetus for further research topics and involve a specific agricultural use case – ideally one defined by the consortium's end users.

The detailed description of each challenge is available in the Annex 3.

This information about specific challenges is available to participants in the database https://opencall.atlas-h2020.eu/ and to the public on a dedicated web page https://www.atlas-h2020.eu/open-call/ during the submission phases of both open calls.

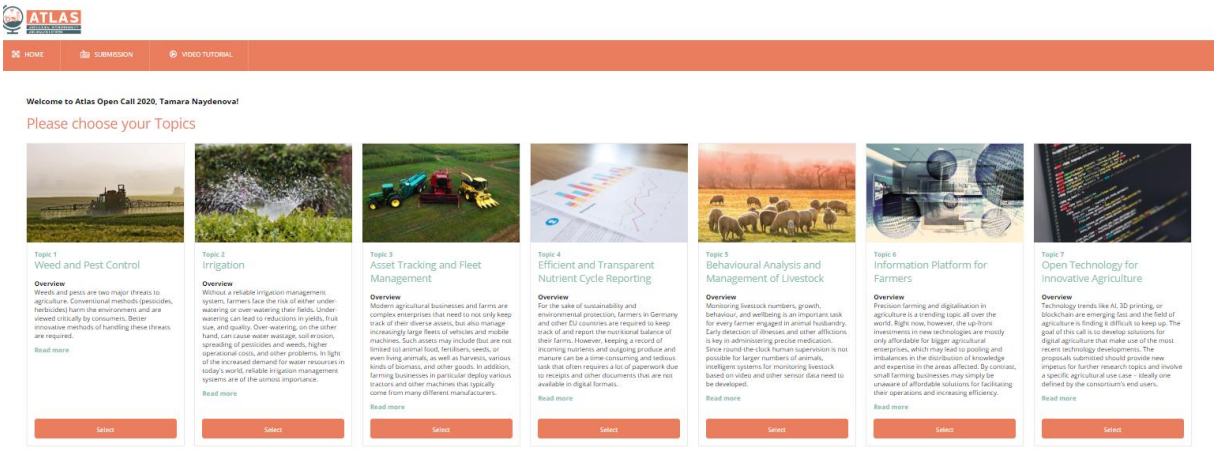

Figure 3: Topics description in the Database

3.3 Preparation for the submission phase.

Since December 2019, AZO, Fraunhofer, and ETAM have been intensively preparing to start the first open call. The activities included:

- defining the challenges,
- developing an electronic Database,
- creating an open call web page,
- developing guidance for participants and experts,
- preparing reporting templates for selected companies,
- outlining a marketing plan for promoting the first open call and the project in general.

The exercised activities served for both calls' preparation and will not be repeated for the second round. The minor changes might be necessary to make based on the first round experience and received feedback from stakeholders.

Detailed information on the activities and outcomes you can find in Annexes 1, 2, 3, and 4 (pages 25, 32, 42, and 48, respectively) and in paragraphs 3.4 and 3.5 (pages 12 and 15, respectively).

3.4 Implementation of a communication strategy to attract submissions

In coordination with Fraunhofer and supported by ETAM, AZO has developed an intensive marketing campaign, including but not limited to:

- Publishing press releases
- Regular posting on AZO's and ATLAS' social media channels
- Producing and promoting videos showing implementation results
- Producing and distributing articles about open calls winners
- Direct acquisition of participants through AZO's innovative network

Task	**Marketing field**	**Description**	**Due date**
ATLAS open call announcement	Press Release	Open call submission announcement through AZO and partners networks	12.05.2020
ATLAS open call announcement	News	Open call promo, Galileo Masters Newsletter	11.06.2020
ATLAS open call results promo	News	Results announcement, Galileo Masters Newsletter	11.12.2020
ATLAS open call announcement	News	Open call announcement Copernicus Masters Newsletter	05.06.2020
ATLAS open call promo	News	Open call promo Copernicus Masters Newsletter	05.07.2020
ATLAS open call results promo	News	Results announcement in Copernicus Masters Newsletter	05.12.2020
ATLAS Newsletter	Press Release	Announcement of the chosen startups / open call results	05.12.2020
ATLAS submission attractions	Social Media	Posts promoting the open call during the submission phase May-Sep via AZO accounts, every week	05.2020-09.2020
ATLAS	Social Media	SoM Adds promoting the open call in June-July via AZO accounts	15.06.2020
ATLAS Web page	Webpage	Open call subpage creation	05.05.2020

Task	Marketing field	Description	Due date
ATLAS	Social Media	Posts promoting open call results via AZO channels	10.12.2020
ATLAS	Social Media	Posts promoting open call results via ATLAS and Partners channels	10.12.2020
ATLAS success stories promotion	Article	Participant's story related to the implementation for AZO Blog	15.12.2020
ATLAS	Social Media	10 posts promoting the open call during the submission phase May-Sep via ATLAS accounts	05.2020-09.2020
ATLAS	Social Media	5 posts promoting the open call during the submission phase May-Sep via Partners accounts	05.2020-09.2020
ATLAS Web page	Graphic	Open call subpage creation - graphics	01.05.2020
ATLAS open call results depiction	Graphic	Open call statistics - fact sheet/ infographic flyer	01.12.2020
ATLAS open call promo	Graphic	Open call pptx and video promo during Copernicus Hackathons events	05.2020-06.2020

Figure 4: Marketing plan for the first open call in 2020

Open calls promotion started with the announcement of the first open call in May 2020 and will continue throughout all three years of the project with very intensive parts during both submission phases.

In addition to publishing information about open calls on the project's web page, the announcement of the submission start was done by:

1) Distributing a press release in seven languages (German, French, Italian, Greek, Spanish, Romanian, Latvian) through all partners' networks. The press release in English is available, for example here https://www.atlas-h2020.eu/wp-content/uploads/2020/05/ATLAS_open_call_press-release_EN_1.0_2020.pdf
2) Posting on multiple social media channels of AZO, ATLAS itself as well as of the consortium partners

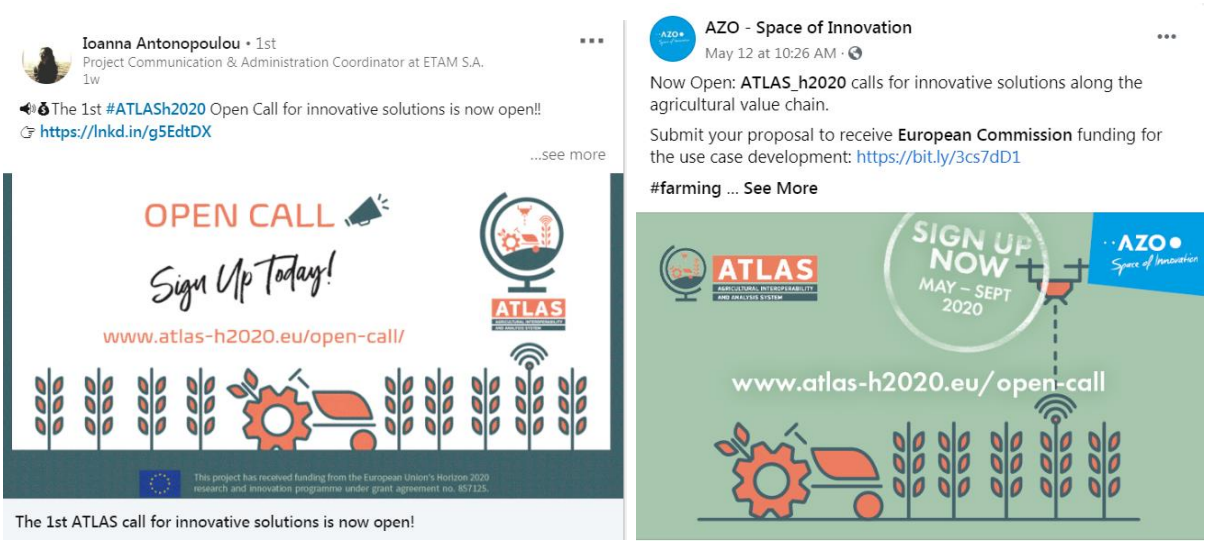

Figure 5: Open call announcement examples on LinkedIn and Facebook

3) Distributing the news through Copernicus EU channel

Figure 6: Open call announcement by Copernicus EU on Twitter

4) Direct announcement to potentially interested innovative companies in the AZO network.

3.5 Submission phase - Support to applicants

AZO has created an electronic submission tool – Database - to gather and manage participant's proposals https://opencall.atlas-h2020.eu/.

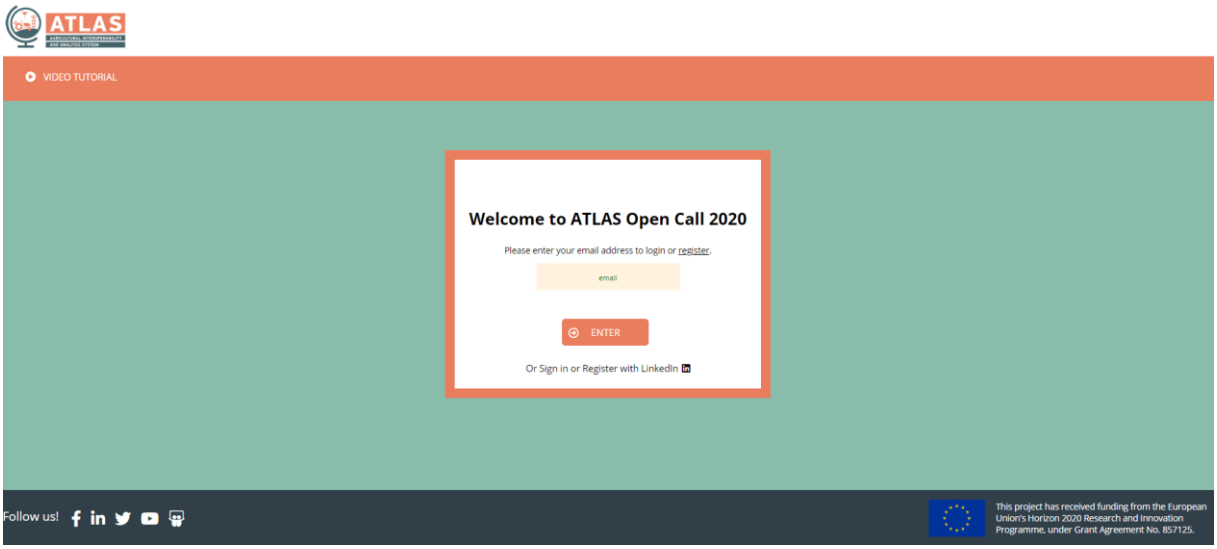

Figure 7: Database for proposals

The tool allows to register by providing an email address as well as through participant's LinkedIn account which facilitates a due diligence process of applied companies.

The Database provides an intuitive interface for all parties involved: participants, evaluators and administrators.

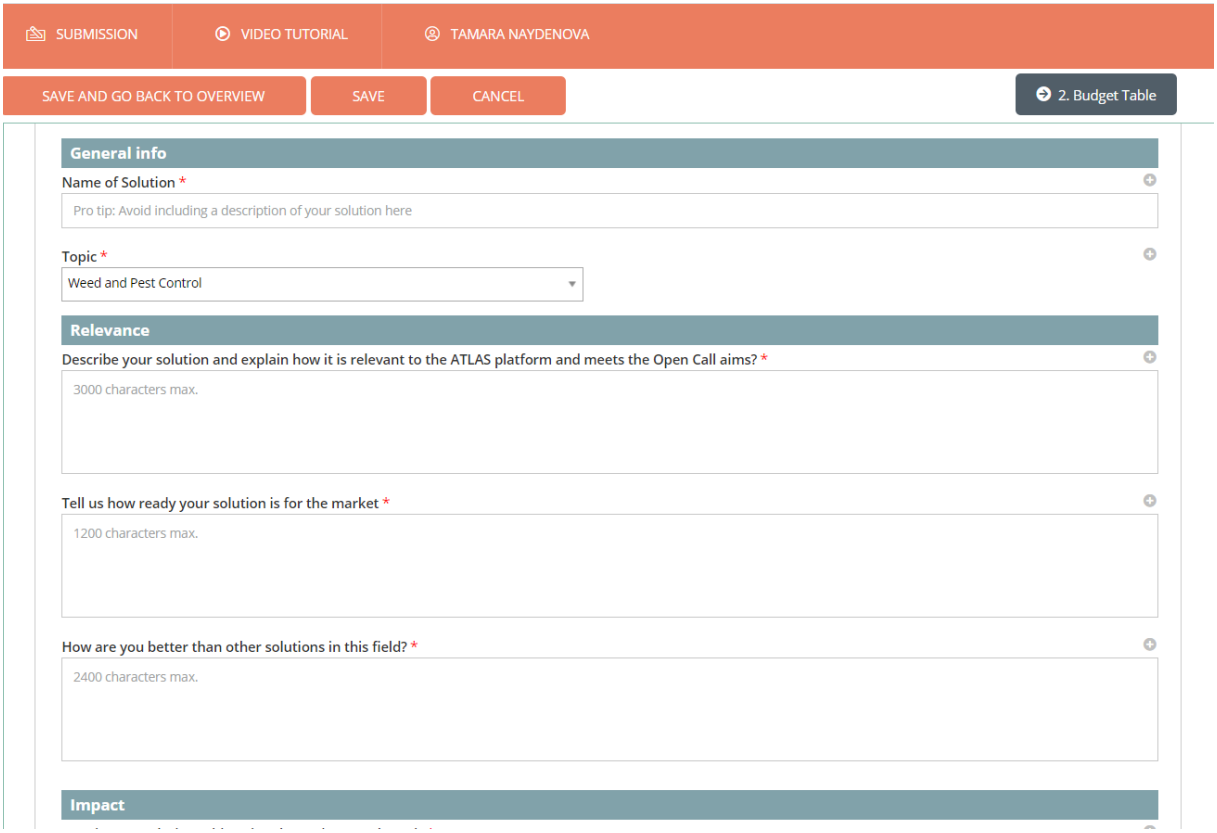

Figure 8: Participants' interface of the Database

AZO has created and made available a pdf application template to enable interested innovative companies to get acquainted with the proposal requirements before registering to the Database. The document is available in the Annex 1, page 25.

To ensure a smooth application process, AZO has produced a video tutorial which is available in the Database, on a dedicated web page, on the project's home page and on YouTube channel https://youtu.be/qjOdRhG-jM0.

Figure 9: Application video tutorial

The submission phase for both open calls will be open for four months. During this time, AZO will provide a helpdesk and support applicants in all possible ways.

To gather all information related to the open calls in one place, a dedicated sub-page has been created on the Internet https://www.atlas-h2020.eu/open-call/. Besides to the necessary documents and challenges description, the sub-page provides short clear answers to possible participants' questions in a visualized, easily perceived way, for example:

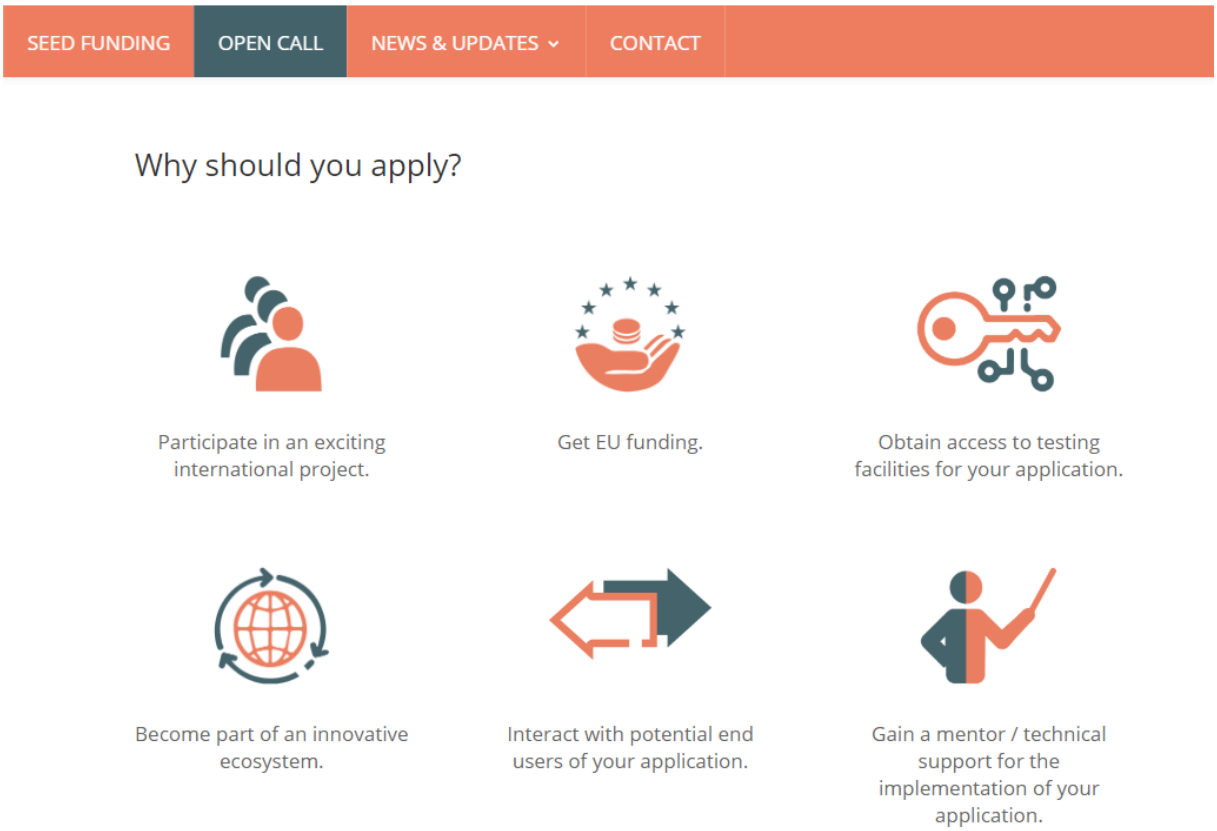

Figure 10: Benefits of participating in the open calls

3.6 Evaluation of submissions

AZO will coordinate and support the evaluation process after the submission phase for proposals ends. An expert's panel from among partners will be built for each open call topic which will evaluate participants' proposals in the Database based on four criteria: Relevance, Impact, Sustainability, and Innovativeness and Feasibility (detailed information is available in the paragraph 5 and in the Annex 2, pages 22 and 32, respectively).

The evaluation will be carried out in two phases:

1) individual scoring by each expert in the Database;
2) online meeting where the best ranking proposals will be discussed and the ten finalists for each open call will be determined.

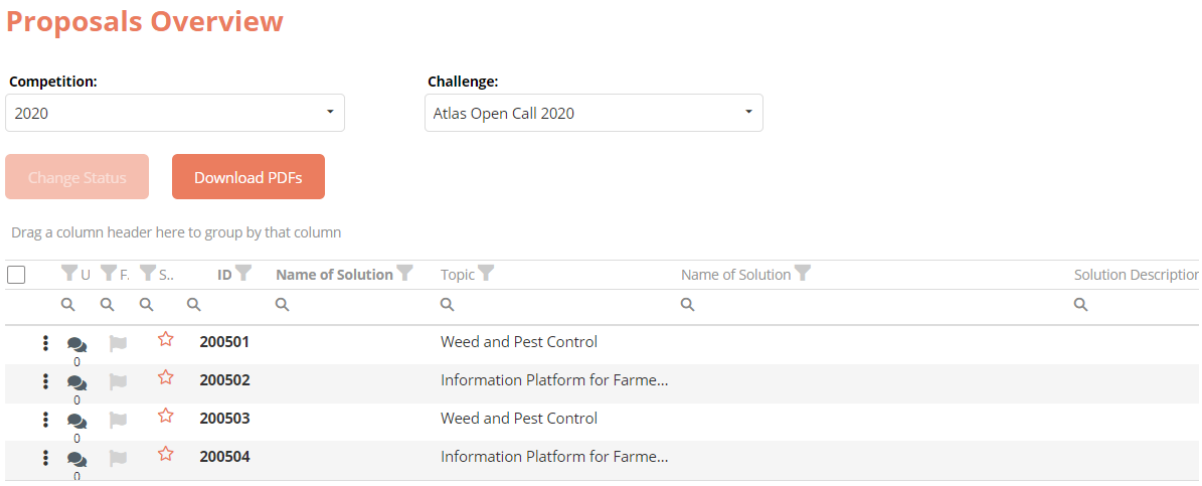

Figure 11: Example of proposals overview for experts

3.7 Contracts conclusion with selected companies

After the end of evaluation, AZO on behalf of the ATLAS consortium will sign a sub-grant agreement with each of the selected companies defining mutual rights and obligations. The sub-grant agreement will detail the milestones and deliverables for the respective use case. The milestones will be defined individually per use case based on their proposals. AZO will coordinate the process of signing the agreement by each selected company. The document will be developed by AZO during the submission phase and approved by the consortium.

3.8 Reporting and payments

3.8.1 First payment to selected companies

70% of the EC funding will be distributed to the selected participants after sub-grant agreements are signed.

3.8.2 Interim report

A short interims report after three months of implementation will be the first deliverable for selected companies. AZO will provide the selected companies with reporting templates and do the check of the documents provided by participants. Interim reporting will help to monitor the implementation progress of the funded solutions and react to possible pitfalls efficiently.

3.8.3 Final report and payment

The final report will be due after six months of the implementation providing clear outcomes description and justification of the resources spent. After a positive evaluation of the final reports, AZO will transfer the remaining 30% of the funding.

The detailed information on funding and reporting is available in paragraph 4, page 20.

3.9 Implementation of selected solutions

The selected companies will have six months to implement their solutions at the pilot sites of the project in close collaboration with relevant project's scientific and industry partners as well as end-users. During this time, their work progress will be closely monitored by AZO through regular online meetings, calls, surveys, etc. AZO will utilize all the projects resources available to make sure the selected companies will implement their solutions successfully and in time.

3.10 Demo Day

AZO will coordinate a final event that constitutes the end of the implementation period of each open call. All the companies funded through the open calls will present their solutions in front of all the project's stakeholders and interested third parties at a Demo Day event.

The event will take place at one of the five project's Innovation Hubs of the project and will present the results of the open call – implemented solutions based on the ATLAS platform. The final event will contribute to building an innovation network in agriculture and showcase interims results of the project. The consortium will invite to the event interested parties from their networks.

4 Open calls funding

4.1 Criteria for calculating the exact amount of the financial support:

The ATLAS consortium will support innovative and agricultural companies in two rounds (2020 and 2021), funding five to 10 companies on average per open call. Only single applicants are eligible to receive funding.

An average of EUR 52.500 will be allocated per use case to be supported via the Open Call. Each selected third party will need to contribute at least 30% of the cost to develop the use case, leading to a budget of EUR 75.000 per use case. Any in-kind contribution related to the development of the proposed solutions is eligible as participants' co-funding. In case the selected proposals require significantly less budget, the consortium may decide to fund additional use cases. However, in no case the cash contribution may exceed EUR 60.000 per proposal.

The table below describes one possible distribution of funding:

Open call	Number of use cases	Total budget per use case (A)	Minimum expected contribution by beneficiary (30% x (A))
1st round	10	EUR 75,000	EUR 22,500
2nd round	10	EUR 75,000	EUR 22,500
Total	**20**	**EUR 1,500,000**	**EUR 450,000**

70% of the EC funding will be distributed to the selected participants following the signing of a sub-grant agreement that details the milestones and deliverables for the respective use case. The milestones will be defined individually per use case based on the corresponding proposals; the deliverables will consist of a short interim report after three months and a final report after six months of implementation. If and when the consortium renders a positive evaluation of the final report and the EC accepts the related financial reporting, the remaining 30% of the funding will be transferred.

Third parties will be required to deliver financial reporting on the total budget and resources used according to the same standards as the ATLAS partners in order to facilitate auditing by the EC, the OLAF, and the European Court of Auditors.

4.2 Reporting templates for the open call beneficiaries:

Participants will be asked to outline their estimated overall budget for the development of the proposed solution and state how they are planning to contribute a min. of 30% co-funding of the total cost.

4.2.1 Proposed budget

Budget item	Total cost (without tax), €	Co-funding amount, € (if applicable)
Personnel cost (min. 80% of the budget)		
Engineering, software development or other services		
Equipment, material, licenses		
Travel cost		
Total (without VAT)		

To each of the proposed budget lines beneficiaries will provide a cost breakdown and supporting documents (invoices, time allocation records, contracts, bank statements, etc.) to each amount claimed.

4.2.2 Personnel cost breakdown:

Task short description	Employee's first and last names	Employee's position in the company	Hourly rate, €	Number of hours spent on the task	Total cost, €

4.2.3 Equipment cost breakdown

Equipment item	Price, €	Associated with Task (short description)

4.2.4 Travel cost breakdown

Task short description	Destination and dates	Employee's first and last names	Accomodation cost, €	Travel cost, €	Other related cost, €	Total cost, €

5 Eligibility and Evaluation criteria

The open calls will aim for incorporating innovative SMEs and innovative start-ups, established and based in one of the EU Member States or an H2020 Associated country as defined in H2020 rules for participation, with a strong focus on data-driven agriculture, as well as small and innovative technophile farming operations, providing novel solutions to the agricultural community. Only single applicants shall be eligible to receive funding. ATLAS will provide seed funding to these companies, aiming for the formation of sustainable ecosystems around the innovation hubs.

Only 100% completed proposals will be evaluated and considered for funding.

There will be built an expert panel for each Open Call topic which will evaluate participants' proposals. The panel will include experts from among consortium industry and scientific partners as well as end-users. The evaluation will be carried on based on 4 criteria (Relevance, Impact, Sustainability, and Innovativeness and Feasibility). For each criterion, each proposal will be given scores of 0 (very poor) to 5 (excellent):

0 – Very poor: the proposal fails to address the criterion or cannot be assessed due to missing or incomplete information (unless the result of an "obvious clerical error").

1 – Poor: the criterion is inadequately addressed or there are serious inherent weaknesses.

2 – Fair: the proposal broadly addresses the criterion but there are significant weaknesses.

3 – Good: the proposal addresses the criterion well but with a number of shortcomings

4 – Very good: the proposal addresses the criterion very well but with a small number of shortcomings.

5 – Excellent: the proposal successfully addresses all relevant aspects of the criterion; any shortcomings are minor.

The specific aspects that evaluators will consider under each of these criteria are available in the Annex 2, page 32.

The evaluation will be carried out in two rounds: 1) each evaluator reviews and ranks assigned proposals individually through the database; 2) evaluators meet online to discuss best proposals, based on the individual ranking and decide on the winners who receive project's funding. In case of doubts, the finalists might be invited to pitch online to the evaluators.

ATLAS looks for proposals aiming for the development of new and innovative services by making use of the technical foundation the ATLAS platform provides. The proposed projects should show a clear value for either actors along the agricultural value chain or consumers. The work carried out in the projects will have a thematic focus on the development of services that build on and extend the use cases carried out within the ATLAS project.

6 Timeline

The following schedule has been defined for two open calls in 2020 and 2021.

Action	***1st Open Call***	***2nd Open Call***
Submission phase	May-Sep 2020	Jun-Sep 2021
Evaluation of submissions	Sep-Oct 2020	Oct-Nov 2021
Contracts conclusion with selected companies and first payment	Nov 2020	Dec 2021
Implementation of selected solutions	Dec 2020 – May 2021	Jan – Jun 2022
Interim Report of selected companies	Feb 2021	Mar 2022
Demo Day of implemented solutions	Jun 2021	Jul 2022
Final Report of selected companies	Jul 2021	Aug 2022
Final payment to selected companies	Aug 2021	Sep 2022

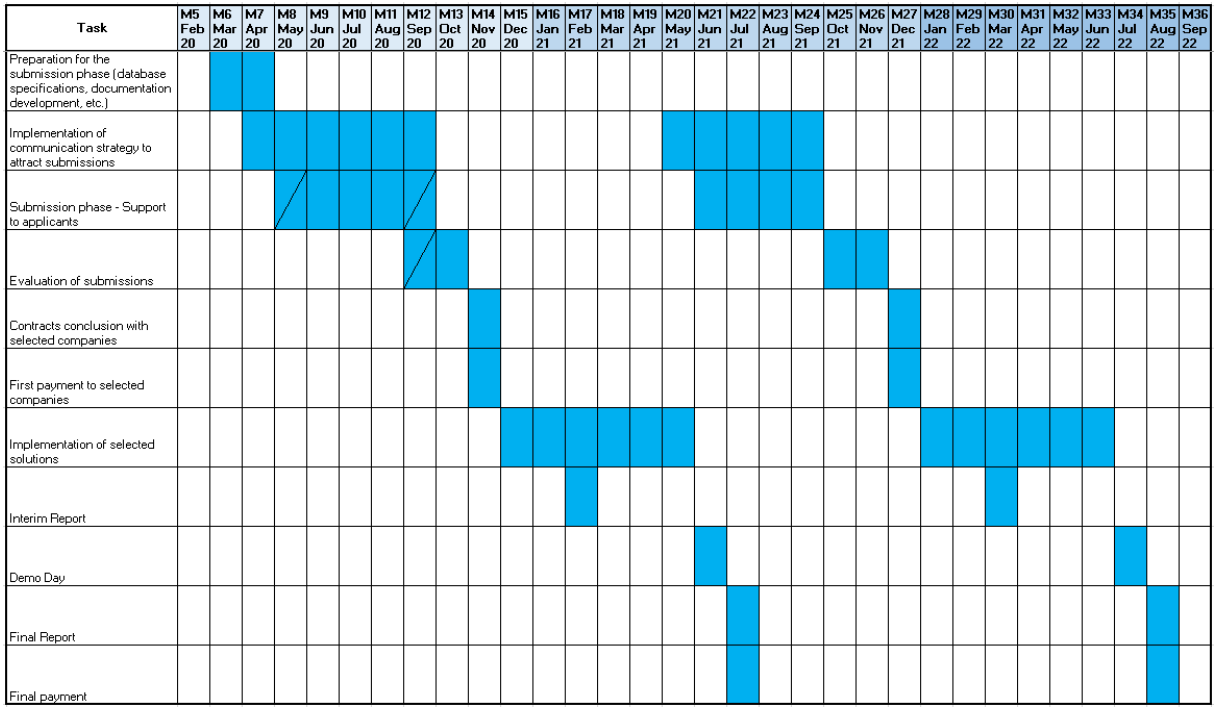

Figure 12: Open calls timeline as Gant diagram

Annex 1. Application template

ATLAS Open Call Application Form

Welcome to the ATLAS Open Call application form. You can save your application anytime and complete it later up until the deadline on 15 September 2020. Your application will be considered for funding only when it is 100% complete. Fields marked with an asterisk (*) are mandatory. If you encounter any issues or have questions, please contact us at opencall@atlas-h2020.eu

1. Administrative Information

1.1. Contact person details

1.1.1. First and last Name

1.1.2. Position

1.1.3. Email

1.1.4. Phone number

1.1.5. I declare that I am eligible to submit this proposal on behalf of my company.

1.1.6. I declare my compliance with General Data Protection Regulation (GDPR) and accept the Privacy Policy.

1.1.7. I accept the Terms of Participation.

1.1.8. Choose a password

1.1.9. Confirm your password

1.1.10. How did you find out about the ATLAS Open Call? (drop-down menu)

1.2. Company details

1.2.1. Company name

1.2.2. Organisation form

1.2.3. Business sector

1.2.4. Street

1.2.5. Postal code

1.2.6. City

1.2.7. Country

1.2.8. Website

1.2.9. VAT number

1.2.10. Registration number

1.2.11. Year founded

1.2.12. Number of employees (optional)

1.2.13. Turnover in 2019 (in euros, optional)

1.2.14. Have you received funding before? (optional)

1.3. Marketing information (optional)

1.3.1. LinkedIn company profile page (@...)

1.3.2. Company's Twitter account (@...)

1.3.3. Company's Facebook account (@...)

1.3.4. Company hashtags

1.3.5. What makes your company unique? (USP)

1.3.6. Your vision

1.3.7. Uploaded images we can use

1.3.8. Your YouTube channel (URL)

1.3.9. Short videos we can use (max. 30-45 sec.)

1.3.10. Other content we can use

1.3.11. Why are you participating in ATLAS?

2. Technical Proposal

2.1. Please complete the open call's technical questionnaire by following these steps:

2.1.1. Enter the name of your solution.

2.1.2. Select a topic that you plan to address with your solution. Note that you can only select one topic for each solution. However, you are free to submit an unlimited number of proposals for different solutions.

2.1.3. Answer all the technical questions about your solution.

2.1.4. Upload the following:

- A work/resource plan (mandatory)
- A video (optional)
- Visual content supporting your application (optional)

You can save your application anytime and complete it later. Your proposal will be considered for funding only when it is 100% complete.

2.2. General info

2.2.1. Name of solution

Enter a title for your submission.

2.2.2. Select a topic

Drop-down menu:

- *Topic 1: Weed and Pest Control*
- *Topic 2: Irrigation*
- *Topic 3: Asset Tracking and Fleet Management*
- *Topic 4: Efficient and Transparent Nutrient Cycle Reporting*
- *Topic 5: Behavioural Analysis and Management of Livestock*
- *Topic 6: Information Platform for Farmers*
- *Topic 7: Open Technology for Innovative Agriculture*

2.3. Relevance

2.3.1. Describe your solution, explaining how it is relevant to the ATLAS platform and meets the open call's aims.
Max. length: 500 words

Please provide a clear, concise description of your project idea. Explain how it meets the open call's aim to create applications with innovative, data-driven services for the ATLAS platform that will simplify and improve the processes along the agricultural value chain. Please include the main motivation for the project. We strongly encourage you to include a video or another visual representation of your solution.

2.3.2. Tell us how ready your solution is for the market.
Max. length: 200 words

What stage of development is your solution currently at? Do you have a working prototype or a ready-to-use application? Please explain where it has been tested, the conditions under which this took place, and what the outcomes were. Note that you will have six months to implement your solution.

2.3.3. How is your solution better than others in its field?
Max. length: 400 words

Clearly articulate how your solution surpasses the state of the art. Demonstrate your awareness of the other solutions out there and who your competitors are. Compare your solution/project to the other solutions on the market and tell us why it will be able to scale and gain market share. How will end users benefit from your solution? Please be specific.

2.4. Impact

2.4.1. How does your solution address the topic you selected?
Max length: 200 words

Show that you understand the challenge and demonstrate how your solution is appropriate for taking it on.

2.4.2. What tangible results will your project produce?
Max length: 200 words

Describe the specific expected output of your six-month pilot project. This is about the product or service you will be deploying.

2.4.3. What impact will your solution have?
Max length: 200 words

Tell us about the economic impact on farmers, the supply chain, agriculture, and the EU economy in general. Are you expecting any social impact (e.g. on quality of life, social inclusion or exclusion, jobs, education, public empowerment, or health and safety)? Please be specific and give examples. You don't have to be 100% accurate, but you must provide enough detail to allow us to evaluate the potential of your proposal.

2.5. Sustainability

2.5.1. How can you demonstrate the use of standards and interoperability in your solution?
Max length: 200 words

You will need to demonstrate interoperability with the ATLAS framework. The usage and validation of emerging standards will be highly appreciated.

2.5.2. What is your revenue model and monetisation strategy?
Max length: 200 words

Please describe how you intend to generate money in the market for the value you are providing. We want to understand your monetisation strategy.

2.5.3. What market segment to you plan to serve, and at what scale? Will you be operating in a national or a pan-European market?
Max length: 200 words

Please describe the nature and size of your current/potential market.

2.5.4. Have you already lined up customers for your solution?
Max length: 200 words

Tell us how many clients/users you have and what type of customers they are.

2.5.5. How do you intend to use the results of your project after the funding period (pilot implementation phase) has ended? What is your growth strategy?
Max length: 400 words

Tell us how this project fits with your growth plans. Describe how you intend to grow your business and increase your productivity through the project.

2.6. Innovativeness and feasibility

2.6.1. Provide an in-depth description of the technology that serves as the innovative foundation of your project. Describe the main technical specifications and advantages of your solution.

Max. length: 500 words
The proposed application must include an innovative concept and make significant use of data provided by the ATLAS platform.

2.6.2. Please outline your planned activities and timeline. How will your project be managed? How are you going to implement your solution?

Provide us with your six-month implementation plan. Explain the activities/tasks involved while indicating the division of labour, what you will deliver, and when. Use the work/resource plan template provided. Please be clear and specific.

2.6.3. What is your proposed budget?

Please outline the estimated overall budget for the development of your proposed solution and state how you are planning to co-fund 30% of the total costs (at minimum). A budget of EUR 75,000 is foreseen for the use case development of each proposal (this includes the applicant's own contribution of at least 30%).

Budget item**	**Total cost (without tax, in euros)**	**Co-funding amount (if applicable, in euros)***
Personnel costs		
Engineering, software development, other services		
Equipment, material, licences***		
Travel costs		
Total (without VAT)		

**Your co-funding amount can be distributed proportionally among all your budget items, or to one particular item. Any in-kind contribution related to the development of your proposed solution is eligible as co-funding.*

*** All budget items need to be directly related to the development of your proposed solution (e.g. office rent is not eligible). Please note that for costs to be eligible, they must be incurred by your company – that is, they have to constitute your own expenditures and involve your own accounts.*

**** Only depreciation costs corresponding to the period of implementation are eligible.*

2.6.4. How are you planning to use the ATLAS network and the datasets available? What else would you need to implement your solution? Will you generate any additional data? Is your solution subject to any EU regulations you will need to follow?

Max. length: 500 words

Please describe your solution from a technical point of view.

Briefly explain how it interacts technically with the ATLAS platform and the data available. You can use verbal descriptions or upload visuals to (for example) illustrate this interaction.

Describe which datasets your project is going to use and/or generate. Please notify us if you need to certify your solution or obtain any licences.

Let us know if you will require other pieces of infrastructure or data to improve your solution. You may wish to provide a visual

representation of how you are going to collect, manage, and process data during your project (this is optional).

2.6.5. Please list the core members of your team. What are their skills and experience?

Here, you need to describe the team that will be working on the project. Keep it simple and try to emphasise skills and experience that are relevant to the project.

№	First and last name	Team role	Relevant experience

2.6.6. What are the risks to your project's success, and what is your risk management strategy?
Max. length: 200 words

This is meant to assess your awareness of potential risks that can occur during the implementation phase. You should describe a compelling plan for mitigating them.

Annex 2. Terms of participation

ATLAS Open Call – Legal Terms and Conditions

Table of Contents

1. Introduction and Project Objectives

ATLAS (Agricultural Interoperability and Analysis System) is an EU-funded project under the Horizon 2020 Framework Programme for Research and Innovation (Grant Agreement No. 857125). This project is being implemented by 30 partners from seven European countries between 2019 and 2022.

The overall objective of ATLAS is to develop an open digital service platform for agricultural applications and use it as a basis for building up a sustainable ecosystem of innovative, data-driven agriculture. The platform will facilitate flexible combinations of agricultural machinery, sensor systems, and data analysis tools to overcome the problem of insufficient interoperability. It will also enable farmers to increase their productivity in a sustainable way by making independent use of the most advanced digital technology and data. By defining a service architecture that provides layers of hardware and software interoperability, the platform

will enable the acquisition and sharing of data from a multitude of sensors and the analysis of this data using numerous approaches to dedicated analysis.

2. Open Call Conditions and Contractual Requirements

The aim of the open call is to establish pilot studies aligned with agricultural use cases at the agricultural operations of the consortium's end-user partners, and to establish Innovation Hubs around these pilots to implement a sustainable ecosystem of innovative companies. The open call's partner, Anwendungszentrum GmbH Oberpfaffenhofen (AZO, referred to hereinafter as "the Coordinator"), will be responsible for organising and executing the open call on behalf of the ATLAS consortium.

ATLAS will publish the open call widely through the defined dissemination and communication processes and adhere to Horizon 2020 standards with respect to transparency, equal treatment, conflicts of interest, and confidentiality. All calls for third parties will be published on the Horizon 2020 Participants Portal and on the project's own web site (https://www.atlas-h2020.eu/). The calls will remain open for at least three months. If a call deadline is changed, an immediate announcement will be published on the corresponding sources. All registered applicants must be informed of the change.

ATLAS will establish an electronic submission system (referred to hereinafter as "the Database") to which all proposals will need to be uploaded. The Database will be closed after the deadline of the call. The evaluators will have access to the proposals through the Database after the submission phase has ended.

Applicants must submit their proposals for one of the seven topics below. A given proposal may only be submitted once; in other words, the same proposal may not be submitted for several topics. However, an applicant may submit any number of proposals. If an applicant submits the same proposal for more than one topic, none of the proposals will be considered for funding.

Topic 1: Weed and Pest Control

Specific challenge: Weeds and pests are two major threats to agriculture. Conventional methods (e.g. pesticides, herbicides) harm the environment and are viewed critically by consumers. Better, more innovative methods of handling these threats are required.

Topic 2: Irrigation

Specific challenge: Without a reliable irrigation management system, farmers face the risk of either under-watering or over-watering their fields. Under-watering can lead to reductions in

yields, fruit size, and quality. Over-watering, on the other hand, can cause water wastage, soil erosion, spreading of pesticides and weeds, higher operational costs, and other problems. In light of the increased demand for water resources in today's world, reliable irrigation management systems are of the utmost importance.

Topic 3: Asset Tracking and Fleet Management

Specific challenge: Modern agricultural businesses and farms are complex enterprises that need to not only keep track of their diverse assets, but also manage increasingly large fleets of vehicles and mobile machines. Such assets may include (but are not limited to) animal feed, fertilisers, seeds, or even living animals, as well as harvests, various kinds of biomass, and other goods. In addition, farming businesses in particular deploy various tractors and other machines that typically come from many different manufacturers. Since assessing the quantity and quality of imported and exported goods manually is growing increasingly difficult and imprecise with the advancing industrialisation of agricultural businesses, the problem of controlling farming materials to be imported or exported needs to be addressed by precise, yet robust sensing solutions. To estimate, account for, and optimise the costs of diverse vehicle fleets, both hardware and software systems have to be tailored to interface with real-life everyday agricultural operations. The collection and analysis of aggregated data from various sources allow for not only precise accounting, but the generation of insights and opportunities for effective optimisation, as well.

Topic 4: Efficient and Transparent Nutrient Cycle Reporting

Specific challenge: For the sake of sustainability and environmental protection, farmers in Germany and other EU countries are required to keep track of and report the nutritional balances of their farms. However, keeping a record of incoming nutrients and outgoing produce and manure can be a time-consuming and tedious task that often requires a lot of paperwork due to receipts and other documents that are not available in digital formats.

Topic 5: Behavioural Analysis and Management of Livestock

Specific challenge: Monitoring livestock numbers, growth, behaviour, and wellbeing is an important task for every farmer engaged in animal husbandry. Early detection of illnesses and other afflictions is key in administering precise medication. Since round-the-clock human supervision is not possible for larger numbers of animals, intelligent systems for monitoring livestock based on video and other sensor data need to be developed.

Topic 6: Information Platform for Farmers

Specific challenge: Precision farming and digitalisation in agriculture is a trending topic all over the world. Right now, however, the up-front investments in new technologies are mostly only affordable for bigger agricultural enterprises, which may lead to pooling and imbalances in the distribution of knowledge and expertise in the areas affected. By contrast, small farming businesses may simply be unaware of affordable solutions for facilitating their operations and increasing efficiency.

For this reason, the simple propagation of basic knowledge and information on precision farming, digitalisation, and available equipment could contribute to quicker adoption of recent technological innovations by small and medium-sized farms. In effect, this could not only increase the profitability of small businesses and decrease environmental footprints over the long term, but also open up entirely new corners of the market.

Topic 7: Open Technology for Innovative Agriculture

Specific challenge: Technology trends like AI, 3D printing, and blockchain are emerging fast and the field of agriculture is finding it difficult to keep up. The goal of this call is to develop solutions for digital agriculture that make use of the most recent technology developments. The proposals submitted should provide new impetus for further research topics and involve a specific agricultural use case – ideally, one defined by the consortium's end users.

For more information on these topics, please visit: https://www.atlas-h2020.eu/open-call/

3. Intellectual Property Rights (IPR)

Applicants will remain the sole owners of their respective projects and retain the IPR to their respective solutions.

The ATLAS consortium itself will not retain an equity stake in any applicant’s company, nor will it retain any IPR. However, the ATLAS consortium will be granted the right to make internal use of any IPR applicants produce as part of their projects for a period of three years after the conclusion of the ATLAS project.

Each evaluator and consortium partner will sign a non-disclosure agreement (NDA) before receiving access to the Database of proposals in order to protect the intellectual property of the applicants. However, ATLAS and the European Commission may ask participants who have received funding to present their work as part of public relations and networking events in order to showcase the benefits of the ATLAS project.

4. Representations, Assumptions, and Provision of Information

The information in the participants' guide and the application template is provided to assist applicants in participating in the open call process. It is not intended as a basis for any investment decisions by applicants and should not be considered an investment recommendation by the ATLAS consortium or any of its advisers. This documentation supersedes any other information provided by the consortium.

Applicants are responsible for undertaking any investigations they consider necessary in order to verify any information provided to them during the open call process. Applicants must form their own opinions by making investigations and taking advice they deem appropriate regarding the documentation, their open call proposals, any associated information, and any responses they receive to their questions from the consortium.

Applicants should form their own conclusions about the methods and resources needed to meet the requirements in the open call process. In particular, the consortium assumes no liability for statements, representations, writings, dialogue, understandings, or information provided in connection with the open call process. Furthermore, the consortium accepts no responsibility for any assumptions and calculations made by applicants regarding the resources necessary to meet the open call requirements.

5. Confidentiality and Disclosure Obligations

The Coordinator and other ATLAS consortium members will treat as confidential all information contained in the proposals. The submitted solutions will be protected against any access by unauthorised third parties. The experts and all other personnel assigned to organise the open call and evaluate the submissions will be required by contract to treat all related matters as confidential.

All the personal data of the participants will also be treated as confidential. Applicants should, however, be aware of the Coordinator's obligations and responsibilities, which may compel it to disclose information provided by applicants in connection with this open call or with any resulting contract.

By submitting a proposal to the ATLAS open call, applicants agree to provide information for promotional and marketing purposes. Their information may therefore be published through the social media channels of ATLAS and/or its partners, the ATLAS website, or relevant press releases.

6. Applicant Ethics and Conflicts of Interest

Applicants are responsible for ensuring their compliance with the ethical and legal principles of the ATLAS project.

Applicants are also responsible for ensuring that no conflicts of interest exist between themselves and the ATLAS partner organisations. A conflict of interest includes any situation in which impartial and objective implementation is compromised for reasons involving economic interests, political or national affinity, family or emotional ties, or any other shared interest. Any applicant who fails to comply with this requirement may be disqualified from the open call.

Questions related to any potential, actual, or perceived conflicts of interest can be posed to the Coordinator at any time during the submission and evaluation phases of the open call. Any changes to an applicant's proposal with respect to conflicts of interest during this open call should immediately be brought to the Coordinator's attention.

Applicants are to ensure that their proposals comply with ethical principles. In particular, this includes the following:

- They must avoid fabrication, falsification, plagiarism, and other research misconduct.
- The information contained in proposals must be correct and complete.
- Proposals must not involve the use of human embryos or cells.
- No third countries may be involved in use case development.
- Proposals must not involve the use of elements that may cause harm to plants, animals, or the environment in general.

By submitting their proposals, participants affirm that they are the sole owners of all rights pertaining to the solutions they submit and that their participation will not violate the rights of any third party. Should any third-party rights nonetheless come to light, participants further affirm that neither the Coordinator nor the consortium partners shall be held liable for any amount of resulting damages or claims. The Coordinator and the consortium partners shall thus be exempt from any third-party claims.

7. Eligibility and Evaluation Criteria

The open call aims to bring together innovative SMEs and start-ups that are based in one of the EU Member States or an H2020 associated country (as defined in the H2020 rules of participation) with a strong focus on data-driven agriculture. It also welcomes small and innovative farming operations with an affinity for technology and providing novel solutions to the agricultural community. Only single applicants are eligible to receive funding. ATLAS will provide seed funding to these companies with an eye towards forming sustainable ecosystems around its Innovation Hubs.

Only 100% completed proposals will be evaluated and considered for funding.

A panel of experts will be assembled for each open call topic to will evaluate participants' proposals based on four criteria (Relevance, Impact, Sustainability, and Innovativeness/Feasibility). For each criterion, each proposal will be given a score of 0 to 5 (half marks are possible):

0 – Very poor: The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information (unless this is the result of an obvious clerical error).

1 – Poor: The criterion is inadequately addressed or there are serious inherent weaknesses.

2 – Fair: The proposal broadly addresses the criterion, but has significant weaknesses.

3 – Good: The proposal addresses the criterion well, but has a number of shortcomings.

4 – Very good: The proposal addresses the criterion very well, with a few shortcomings.

5 – Excellent: The proposal successfully addresses all the relevant aspects of the criterion; any shortcomings are minor.

These are the aspects that the evaluators will consider under each of the following criteria:

Relevance (0-5 points)

- How clearly the solution is described
- How relevant it is to the ATLAS platform and how well it meets the open call's aims
- How ready the solution is for the market
- What the solution's competitive advantage is

Impact (0-5 points)

- How the solution addressed the selected topic
- What the project's tangible output will be
- The impact the solution will have

Sustainability (0-5 points)

- The solution's use of standards and interoperability
- Revenue model and monetisation strategy
- Nature and size of the market segment to be addressed
- Whether customers are already lined up for the solution

- Growth strategy and intended use of the project's results after the funding period (pilot implementation phase)

Innovativeness and Feasibility (0-5 points)

- How clear the project's innovative foundation is
- Planned activities and implementation timeline
- Proposed budget
- Plans to use the ATLAS network and the datasets available
- What else would be needed to implement the solution? Is the solution subject to any EU regulations?
- Will any additional data be generated?
- How relevant are skills and experience of the core members of the team?
- Risk management strategy for the project

ATLAS is looking for proposals that aim to develop new and innovative services by making use of the technical foundation the ATLAS platform provides. The proposed projects should demonstrate clear value for either consumers or stakeholders along the agricultural value chain. The work carried out in the projects should have a thematic focus on developing services that build on and extend the use cases carried out within the ATLAS project.

8. Funding

The ATLAS consortium will support innovative and agricultural companies in two rounds (2020 and 2021), funding five to 10 companies on average per open call. Only single applicants are eligible to receive funding.

An average of EUR 52,500 will be allocated per use case to be supported via each open call. Each selected third party will need to contribute at least 30% of its proposed budget to develop its use case, resulting in an average total budget of EUR 75,000 per use case. Any in-kind contribution related to the development of a proposed solution is eligible as co-funding.

The table below describes one possible distribution of funding:

Open call	Number of use cases	Total budget per use case (A)	Minimum expected contribution by beneficiary (30% x (A))
1st round	10	EUR 75,000	EUR 22,500
2nd round	10	EUR 75,000	EUR 22,500
Total	**20**	**EUR 1,500,000**	**EUR 450,000**

70% of the EC funding will be distributed to the selected participants following the signing of a sub-grant agreement that details the milestones and deliverables for the respective use case. The milestones will be defined individually per use case based on the corresponding proposals; the deliverables will consist of a short interim report after three months and a final report after six months of implementation. If and when the consortium renders a positive evaluation of the final report and the EC accepts the related financial reporting, the remaining 30% of the funding will be transferred.

Third parties will be required to deliver financial reporting on the total budget and resources used according to the same standards as the ATLAS partners in order to facilitate auditing by the EC, the OLAF, and the European Court of Auditors.

9. Schedule

1st Open Call	
Submission phase	May-Sep 2020
Evaluation of submissions	Sep-Oct 2020
Conclusion of contracts with selected companies	November 2020
Implementation of selected solutions	Dec 2020 – May 2021
Interim reports from selected companies	Feb 2021
Demo day for implemented solutions	June 2021
Final reports from selected companies	July 2021
2nd Open Call	
Submission phase	June-Sep 2021
Evaluation of submissions	Oct-Nov 2021
Conclusion of contracts with selected companies	Dec 2021
Implementation of selected solutions	Jan-June 2022
Interim reports from selected companies	March 2022
Demo day for implemented solutions	July 2022
Final reports from selected companies	August 2022

10. Data Protection and Compliance with the GDPR

The Coordinator and the ATLAS consortium are committed to complying with EU General Data Protection Regulation (GDPR) in processing personal data related to the ATLAS consortium, including with regard to the open call.

All participants' personal data must be handled exclusively in a Member State of the European Union or in a country associated with Horizon 2020. Any transfer of personal data to a third country is prohibited.

The obligations related to personal data protection will remain in effect for an unlimited period or as long as prescribed by applicable law. By submitting a proposal, applicants agree to comply with the GDPR regarding all personal data that might be included in their proposals or used during the implementation of their projects (should their proposals be accepted). Should this condition be violated, the applicant in question will be the only liable party. Neither the Coordinator nor the ATLAS consortium will accept any related responsibilities.

In addition to the evaluation process, which will be subject to non-disclosure agreements, all applications to the open call will be handled according to the privacy policy regulations of the consortium (these are available at https://www.atlas-h2020.eu/).

11. Governing Law and Jurisdiction

These terms of participation are subject to the material laws of the Federal Republic of Germany. The place of jurisdiction for any and all legal disputes arising from or otherwise related to these terms is Munich (Landgericht München I). Imperative places of jurisdiction under German law shall remain unaffected by the foregoing.

12. Miscellaneous

Applications to the open call must be submitted in English. All communication related to the ATLAS open call will also be conducted in English. Any complaints regarding the evaluation and selection decisions made will be arbitrated by the European Commission. The Coordinator and the EC reserve the right to modify these terms at any time.

The Coordinator may at any time request further supplemental information from applicants to verify or clarify any aspects of their open call proposal or other information they may have provided. A failure to provide supplemental or clarifying information to the Coordinator by a stated deadline may result in an applicant's proposal being rejected and the applicant being disqualified from the open call process. The Coordinator is not obligated to make any such requests.

13. Contact

For more information on the ATLAS project, please visit: https://www.atlas-h2020.eu/

If you have any further questions about the open call, please contact opencall@atlas-h2020.eu.

Version 1.0, created on 5 May 2020

Annex 3. Open call 2020 Challenges

ATLAS Open Call 2020: Topics

Topic 1: Weed and Pest Control

Specific challenge

Weeds and pests are two major threats to agriculture. Conventional methods (pesticides, herbicides) harm the environment and are viewed critically by consumers. Better innovative methods of handling these threats are required.

Scope

- Innovative precision-farming methods require a minimal amount of pesticides and herbicides – or none at all.
- Early warning and risk assessment systems can analyse data on climates, soil, and other factors to gauge the risk of weed and pest infestation.
- Instead of using pesticides, weeds can be eliminated using laser scanners or flame throwers (for example).

Resources provided by ATLAS

- Drone/satellite data that provides estimations of biomass. This data could be used to assess current weed and pest infestations.
- Weather data information gathered from drones and/or weather stations, which can help estimate the probability of weed and pest infestations

Expected outcome

- An eco-friendly method of assessing and controlling weed and pest infestations on farms

Topic 2: Irrigation

Specific challenge

Without a reliable irrigation management system, farmers face the risk of either under-watering or over-watering their fields. Under-watering can lead to reductions in yields, fruit size, and quality. Over-watering, on the other hand, can cause water wastage, soil erosion, spreading of pesticides and weeds, higher operational costs, and other problems. In light of the increased

demand for water resources in today's world, reliable irrigation management systems are of the utmost importance.

Scope

- Irrigation management and optimisation to effectively control water usage
- Measurement and documentation of water usage
- Development of sensor networks and measurement systems for measuring soil moisture and leaf wetness to prevent over-watering

Resources provided by ATLAS

- Sensors to measure soil moisture or leaf wetness, which can help determine whether fields need further watering
- Measurement data (e.g. from SoilNet)
- Satellite or weather data on the possibility of rain, which can be used to determine whether further irrigation is necessary

Expected outcome

- Significant optimisation of water usage for irrigation purposes
- Software and hardware solutions that address irrigation problems within the scope outlined above

Topic 3: Asset Tracking and Fleet Management

Specific challenge

Modern agricultural businesses and farms are complex enterprises that need to not only keep track of their diverse assets, but also manage increasingly large fleets of vehicles and mobile machines. Such assets may include (but are not limited to) animal food, fertilisers, seeds, or even living animals, as well as harvests, various kinds of biomass, and other goods. In addition, farming businesses in particular deploy various tractors and other machines that typically come from many different manufacturers.

Since assessing the quantity and quality of imported and exported goods manually is growing increasingly difficult and imprecise with the advancing industrialisation of agricultural businesses, the problem of controlling farming materials to be imported or exported needs to be addressed by precise, yet robust sensing solutions. To estimate, account for, and optimise the costs of diverse vehicle fleets, hardware and software systems both have to be tailored to interface with real-life everyday agricultural operations. The collection and analysis of aggregated data from various sources allow for not only precise accounting, but the generation of insights and opportunities for effective optimisation, as well.

Scope

- Hardware solutions for assessing the quality and quantity of goods commonly imported or exported in the agricultural domain. These might include sensing equipment (such as scales to be integrated with load trailers), remote sensing technology, or entirely different practicable approaches.
- Hardware and software for secure tracking of heterogeneous vehicle fleets and other mobile machines used in agriculture
- Hardware and/or software for aggregating and analysing recorded data to optimise fleet usage, reduce fuel consumption, coordinate imports more efficiently, or achieve other desirable goals

Resources provided by ATLAS

- Access to test sites
- Contact with early adopters among farmers
- Real vehicle and material data

Expected outcome

- Increased precision in the assessment of imported and exported goods
- Reductions in the time required to estimate the quantity and quality of transferred materials
- Improved efficiency in fleet management
- Decreased wear and fuel consumption by transport vehicles
- Minimisation of idle time and empty trips

Topic 4: Efficient and Transparent Nutrient Cycle Reporting

Specific challenge

For the sake of sustainability and environmental protection, farmers in Germany and other EU countries are required to keep track of and report the nutritional balance of their farms. However, keeping a record of incoming nutrients and outgoing produce and manure can be a time-consuming and tedious task that often requires a lot of paperwork due to receipts and other documents that are not available in digital formats.

Scope

- Connect farmers digitally to their suppliers and recipients, as well as to administrative bodies and subsidy systems
- Provide a system that can keep track of all in- and outgoing nutrients and make the data easily accessible and understandable to the farmer
- Assist farmers in measuring the number of nutrients in their produce and manure using weighing systems and other sensors

Resources provided by ATLAS

- Contact with farmers in the ATLAS consortium who can test your solution and provide feedback
- Access to existing data sources and management systems

Expected outcome

- An easy-to-use software solution that addresses the problem within the scope outlined above
- Significant reduction in the administrative workload of farmers when it comes to reporting nutritional balances
- Close cooperation with farmers to develop a solution that meets with their approval

Topic 5: Behavioural Analysis and Management of Livestock

Specific challenge

Monitoring livestock numbers, growth, behaviour, and wellbeing is an important task for every farmer engaged in animal husbandry. Early detection of illnesses and other afflictions is key in administering precise medication. Since round-the-clock human supervision is not possible for larger numbers of animals, intelligent systems for monitoring livestock based on video and other sensor data need to be developed.

Scope

- Develop intelligent systems for real-time video analysis of livestock
- Provide early warning systems for animal diseases and dangerous or harmful animal behaviours
- Help farmers monitor and predict the growth of their animals

Resources provided by ATLAS

- Access to (3D) camera streams from pigsties and poultry coops at participating ATLAS pilot sites
- Access to the pilot sites themselves in order to test your solution and cooperate closely with the associated farmers

Expected outcome

- A software solution or web-based service that addresses the problem within the scope outlined above
- Significant reduction in the average number of antibiotics and other medications administered to each animal

- Overall improvements in animal health and wellbeing thanks to early detection of diseases and dangerous behaviours

Topic 6: Information Platform for Farmers

Specific challenge

Precision farming and digitalisation in agriculture is a trending topic all over the world. Right now, however, the up-front investments in new technologies are mostly only affordable for bigger agricultural enterprises, which may lead to pooling and imbalances in the distribution of knowledge and expertise in the areas affected. By contrast, small farming businesses may simply be unaware of affordable solutions for facilitating their operations and increasing efficiency.

For this reason, the simple propagation of basic knowledge and information on precision farming, digitalisation, and available equipment could contribute to quicker adoption of recent technological innovations by small and medium-sized farms. In effect, this could not only increase the profitability of small businesses and decrease environmental footprints over the long term, but also open up entirely new corners of the market.

Scope

- Marketing strategies for existing precision-farming equipment with a focus on small agricultural businesses
- Information campaigns to inform farmers who are not yet aware of the opportunities offered by iterative digitalisation
- Novel information strategies aimed at small businesses to raise awareness of precision farming and increase efficiency by technological means
- Founding initiatives to enable the use of elaborate technology by small farms via a renting or sharing economy

Resources provided by ATLAS

- Contact with the target demographic and market experts
- Experience reports from early technology adopters in agriculture
- Access to demonstration technology

Expected outcome

- Greater awareness of digitalisation and precision farming among small agricultural businesses
- Increased rate of adoption of precision farming methods in Europe

Topic 7: Open Technology for innovative Agriculture

Specific Challenge

Technology trends like AI, 3D printing, or blockchain are emerging fast and the field of agriculture is finding it difficult to keep up. The goal of this call is to develop solutions for digital agriculture that make use of the most recent technology developments. The proposals submitted should provide new impetus for further research topics and involve a specific agricultural use case – ideally one defined by the consortium's end users.

Scope

Proposals may cover (but are not limited to) one or a combination of the following topics, for example:

- 3D printing for agriculture
- User interfaces for tractor terminals in field applications
- Hyperspectral data analysis
- Robust in-field communication (e.g. LoRaWAN)
- Modelling and simulation
- Artificial intelligence
- Blockchain technology

Any other ideas related to digital agriculture, system interoperability, and IoT technology will be highly appreciated.

Resources provided by ATLAS

- Data from the test sites
- APIs and access to analysis services
- Contact with the target demographic and market experts
- Experience reports from early adopters of agricultural technology
- Access to demonstration technology

Expected impact

- Working prototypes that demonstrate the capabilities of novel technology
- A useful concept approved by the end users
- Increased awareness of new opportunities and areas of application for emerging technology in agriculture

Annex 4. Evaluators non-disclosure agreement

ATLAS Open Call Non-Disclosure Agreement and Terms of Participation for Experts

Table of Contents

1 Preamble

ATLAS (Agricultural Interoperability and Analysis System) is an EU-funded project under the Horizon 2020 Framework Programme for Research and Innovation (Grant Agreement No. 857125). This project is being implemented by 30 partners from 7 European countries between 2019 and 2022.

The overall objective of ATLAS is the development of an open digital service platform for agricultural applications and to build up a sustainable ecosystem for innovative data-driven agriculture using the platform.

The aim of the Open Call is to establish pilot studies aligned to agricultural use cases on the agricultural operations of the consortium's end user partners, and to establish the Innovation Hubs around these pilots to implement a sustainable ecosystem of innovative companies around these pilots. Partner AZO Anwendungszentrum GmbH Oberpfaffenhofen (AZO) will be

responsible for the organisation and execution of the Open Calls on behalf of the ATLAS consortium and will be called further in this document as “Coordinator”.

The ATLAS consortium will distribute EUR 1.050.000 in two rounds (2020 and 2021), funding 5 to 10 companies per Open Call. Only single applicants shall be eligible to receive funding.

The Coordinator assigns individual experts (hereinafter “Expert”) with the evaluation of the proposals (hereinafter “Proposals”) submitted by the Applicants.
Before evaluating these Proposals, the Expert commits to the following Non-Disclosure-Agreement and Terms of Participation:

2 Eligibility

Expert is a resident of one of the Horizon2020 Participating countries1 or is employed with a legal identity registered in the territory of one of the Horizon2020 Participating countries.

Expert confirms that they do not, to the best of their knowledge, have any interest in any of the proposals submitted in the open call, they have not been involved in their preparation and do not benefit either directly or indirectly from the eventual selection. Should Expert discover a conflict of interest during the evaluation, they undertake to declare this and to withdraw from the evaluation.

3 Procedure and Terms of Participation

The Expert is willing to assess, classify and rate the Proposals. The Expert’s assessment and rating of Proposals will be used by ATLAS consortium partners to determine the Applicants’ capabilities to implement their proposals within the framework of the ATLAS project.

The open calls will aim for incorporating innovative SMEs and innovative start-ups, established and based in one of the EU Member States or an H2020 Associated country as defined in H2020 rules for participation, with a strong focus on data-driven agriculture, as well as small and innovative technophile farming operations, providing novel solutions to the agricultural community. Only single applicants shall be eligible to receive funding. ATLAS will provide seed funding to these companies, aiming for the formation of sustainable ecosystems around the innovation hubs.

Only 100% completed proposals will be evaluated and considered for funding.

The Coordinator will allow the Expert access to the Proposals via download from a password protected server. The Expert must not make copies of such Proposals.

[1] The Horizon2020 Participating countries include all the EU Member States and a number of associated and other countries, listed here https://ec.europa.eu/research/horizon2020/index.cfm?pg=country-profiles

Expert will be part of an experts Panel for each open call topic, and will evaluate participants' proposals based on 4 criteria (Relevance, Impact, Sustainability, and Innovativeness and Feasibility). For each criterion, each proposal will be given scores of 0 to 5 (half marks are possible), as follows:

0 – Very poor: the proposal fails to address the criterion or cannot be assessed due to missing or incomplete information (unless the result of an "obvious clerical error").

1 – Poor: the criterion is inadequately addressed or there are serious inherent weaknesses.

2 – Fair: the proposal broadly addresses the criterion but there are significant weaknesses.

3 – Good: the proposal addresses the criterion well but with a number of shortcomings

4 – Very good: the proposal addresses the criterion very well but with a small number of shortcomings.

5 – Excellent: the proposal successfully addresses all relevant aspects of the criterion; any shortcomings are minor.

The Expert will assess and rate Proposals disclosed in accordance with the evaluation criteria and guidelines of the Coordinator. The Expert will remotely evaluate the Proposals and provide an assessment and rating thereof in the form of an evaluation sheet provided by the Coordinator.

Such remote evaluation will be followed by an evaluation meeting with the other experts and the partners, moderated by the Coordinator. The timing and nature of such meeting will be communicated by the Coordinator in due time.

The Applicants will receive an average rating of all Experts after the Proposals have been evaluated. Anonymised justifications and recommendations for future improvement will be provided on request.

4 Definition of Confidential Information

"Confidential Information" means any information in the Proposal disclosed to the Expert and the Expert's assessment and rating of any Proposal, data and information, know-how, business concepts, software, procedures, products, services, development projects, and programmes contained in such Proposal and/or its description and any conclusions. This also includes any personal data of the Applicants that the Expert may come in contact with throughout the course of the evaluation process.

Confidential Information does not include:

- information already known or independently developed by the Expert prior to the disclosure of any Proposal;
- information already in the public domain through no wrongful act of the Expert;
- information received from a third party who was free to disclose such information.

In case of doubt any information is deemed to be a Confidential Information unless the Expert proves, that such information is not confidential.

5 Non-Disclosure of Confidential Information / Obligations of Expert

The Expert shall not use any Confidential Information for any purpose except to review, assess and to rate the respective Proposals.

The Expert shall not disclose any Confidential Information to any third party or to the Expert's employees and/or employer without the prior written consent of Coordinator. The Expert shall require its employees who will have access to Confidential Information to commit to a non-disclosure agreement that protects the Confidential Information to at least the same degree as this Agreement.

The Expert shall take all reasonable measures to protect the secrecy of, and avoid any unauthorised disclosure or use of Confidential Information. Such measures shall include the highest degree of care that the Expert utilises to protect the Expert's own confidential information of a similar nature, but no less than reasonable care.

Notwithstanding the Expert's right to assess and rate the proposals, the Expert shall not use the confidential information for its own or third party's purposes and shall not file for any intellectual right protection for the Confidential Information or parts of it.

The Expert shall notify the Coordinator immediately in writing of any misuse or misappropriation of any Confidential Information that may come to the Expert's attention. The Expert agrees to segregate all Confidential Information relating to this agreement from Confidential Information of others to avoid commingling.

All **personal data** related to the Proposal of the Applicant must be kept confidential and may not be communicated to anyone other than the persons announced to the Organizer. This includes both internal and third parties, as well as affiliated companies. The Expert will comply with the applicable data protection laws and undertakes that appropriate technical and organizational measures have been implemented to protect the confidentiality of the participants' personal data and any information related to their Proposals.

6 Discontinuation of Use, Return of Materials

At the Coordinators first request, the Expert shall:

a) discontinue all use of Confidential Information;
b) return to the Coordinators all materials furnished by the Coordinators that contain Confidential Information;
c) destroy any copy and all materials produced by and under control of the Coordinators that contain Confidential Information;
d) erase and/or destroy any Confidential Information contained in computer memory or data storage apparatus of, under control of or used by the Expert;
e) remove the Confidential Information from any software or data base of, under control of / or used by the Expert that incorporates or uses the Confidential Information in whole or in part; and
f) warrant in writing to the Coordinator, within ten (10) days after the Coordinators' request, that the Expert has taken all actions set out under (a) through (e) in this Clause 6.

7 Notice of Required Disclosure

If the Expert is required by mandatory, non-appealable judicial or administrative process and/or order to disclose Confidential Information, then the Expert shall promptly notify the Coordinator and allow the Coordinator and the respective Applicant a reasonable time to oppose such process unless this is not admissible under a mandatory law, judicial or administrative order. Notwithstanding the foregoing the Expert shall disclose Confidential Information only to the minimum extent required to comply with such order.

8 Proprietary Rights, Limited Right to Use

Any and all proprietary rights, including but not limited to rights to and in inventions, patent rights, utility models, copyrights, trademarks and trade secrets, in and to any Confidential Information shall be and remain with the Applicant respectively, and the Expert shall not have any right, license, title or interest in or to any Confidential Information, except the limited right to review, assess and rate such Confidential Information in connection with the ATLAS Open Call 2020. All work completed by the Expert shall be considered as a "work made for hire" and all right, title and interest in such work shall belong to the Coordinator and the respective Partners.

9 Term

This Agreement shall be effective as of 15.05.2020 and shall remain in until the end of the implementation period of the Grant Agreement No. 857125 between the ATLAS consortium partners and the European Union's Horizon 2020 Research and Innovation Programme.

Notwithstanding the termination of this Agreement any Confidential Information must be kept confidential for as long as such Confidential Information is not publicly known unless it

becomes part of the public domain through no wrongful act of the Expert. This agreement may not be changed or modified, except by an agreement in writing, signed by both parties.

The obligations related to personal data protection shall continue in full force and effect for an unlimited period.

10 Governing Law and Jurisdiction

This Agreement and the rights and obligations of the parties hereunder shall be governed by the material laws of the Federal Republic of Germany.

The place of jurisdiction for any and all legal disputes arising out of or in connection with this Agreement is Munich (Landgericht München I). Imperative places of jurisdiction under German Law shall remain unaffected by the foregoing.

11 Notification of Unauthorised Use

The Expert shall notify the Coordinator immediately upon discovery of any unauthorised use or disclosure of Confidential Information or any other breach of this Agreement by the Expert, and will cooperate with the Coordinator in every reasonable way to help the Coordinator regain possession of the Confidential Information and prevent its further unauthorised use or publication.

12 Remedies

The Expert acknowledges that their obligations under this Agreement are necessary and reasonable to protect the Proposals and the Confidential Information. Each party further acknowledges that any breach by the Expert of the Expert's covenants and agreements outlined in this Agreement or threatened violation of such may cause irreparable injury to the Coordinator and the ATLAS project.

13 Miscellaneous

This Agreement shall be binding upon the Coordinator and the Expert, and their successors and assigns. This Agreement contains the entire agreement and understanding of the parties relating to the subject matter hereof and supersedes all prior discussions, agreements and understandings of every nature between them.

This Agreement may not be changed or modified, except by an agreement in writing signed by both of the parties.

The failure or delay on the part of either party to exercise any right under this Agreement shall not be deemed a waiver of any rights under this Agreement.

The Expert is aware that an unauthorised disclosure of the Proposals and of the assessment and rating of the Proposals and of any Confidential Information may lead to serious damage

to the Applicants and the Coordinator of the ATLAS open calls. This Agreement shall be for the benefit of the Applicants.

Version dated May 15, 2020