



Open Call 1 Innovators
Open Call Text



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Document Revision History

Date	Issue	Author/Editor/Contributor	Summary of the main change
11/Aug	V0.1	Luisa Gonçalves	Draft
8/Feb	V0.2	Luisa Gonçalves	Draft
11/Fev	V0.3	Luisa Gonçalves	Final



1. Introduction

This document contains a text with an overview of AIPlan4EU and the Open Call 1 – Innovators.

1.1 AIPlan4EU in a brief

The European Commission funds AIPlan4EU Project under the European Union’s Horizon 2020 Information and Communication Technologies programme and the call topic ICT-49-2020. The project launched in January 2021. The AIPlan4EU consortium comprises 16 European partners from different industries and expertise (research groups and companies). The project will have a duration of 3 years with 11 milestones. Within the consortium, seven application areas will be considered from the beginning. These are both areas where planning has already been used and where planning has seen very little application: planning for space, agriculture, manufacturing, logistics, autonomous driving, automated experimentation, and subsea robotics). In addition to these application areas, AIPlan4EU uses part of the cascade funding to widen the elicitation of requirements as much as possible.

The AIPlan4EU project will bring AI planning as a first-class citizen in the European AI On-Demand (AI4EU) Platform by developing a uniform, user-centred framework to access the existing planning technology and by devising concrete guidelines for innovators and practitioners on how to use this technology. To do so, we will consider use-cases from diverse application areas that will drive the design and the development of the framework, and include several available planning systems as engines that can be selected to solve practical problems. We will develop a general and planner-agnostic API that will both be served by the AI4EU platform and be available as a resource to be integrated into the users’ systems. The framework will be validated on use-cases both from within the consortium and recruited by means of cascade funding; moreover, standard interfaces between the framework and common industrial technologies will be developed and made available.

AIPlan4EU is based on a methodology designed to address the challenge of building the UPF (Unified Planning Framework) and developing a sustainable and robust ecosystem around it. A key aspect is to ensure that the integration of the UPF within such an ecosystem will bring tangible value for innovators and practitioners of planning and the AI4EU platform and that the cascade funding will provide valuable assets and feedback at the right time in the project.

AIPlan4EU is centred around 6 ambitious objectives:

- O1: Making planning accessible to practitioners and innovators
- O2: Facilitate the integration of planning and other ICT technologies
- O3: Making planning relevant in diverse application sectors
- O4: Seamlessly integrate planning within the AI4EU platform
- O5: Facilitate learning of planning for reskilling and lower the access barrier
- O6: Standardize and drive academic research towards applications.

You can find the use-case details on our website <https://www.aiplan4eu-project.eu/>

1.2 Open Calls Overview

The project will use the Funding Support to Third Parties (FSTP) mechanism to push the uptake of AI planning technologies through an AI on-demand platform (AI4EU), to widen the use-cases addressed by the project, and to robust the collection of planning engines within the UPF (Unified Planning Framework). To connect applications to the planning technology in the UPF, we envision several technology-specific bridges (TSBs): interfaces that map the applicative data and abstractions into planning and vice versa.

AIPlan4EU will organize 2 open calls for innovators to widen the use-cases addressed by the project, to robust the collection of planning engines within the UPF, and increase the number of technologies integrated through TSBs. This document refers to Open Call 1 Innovators. We will issue the following:

Call 1 Innovators is focused on engaging with innovators (researchers, experts, students,...) and organisations (SMEs, MidCaps, larger companies, universities, research centres, labs,...). This call will be issued, with the following specific tracks having each track accessing different scopes.

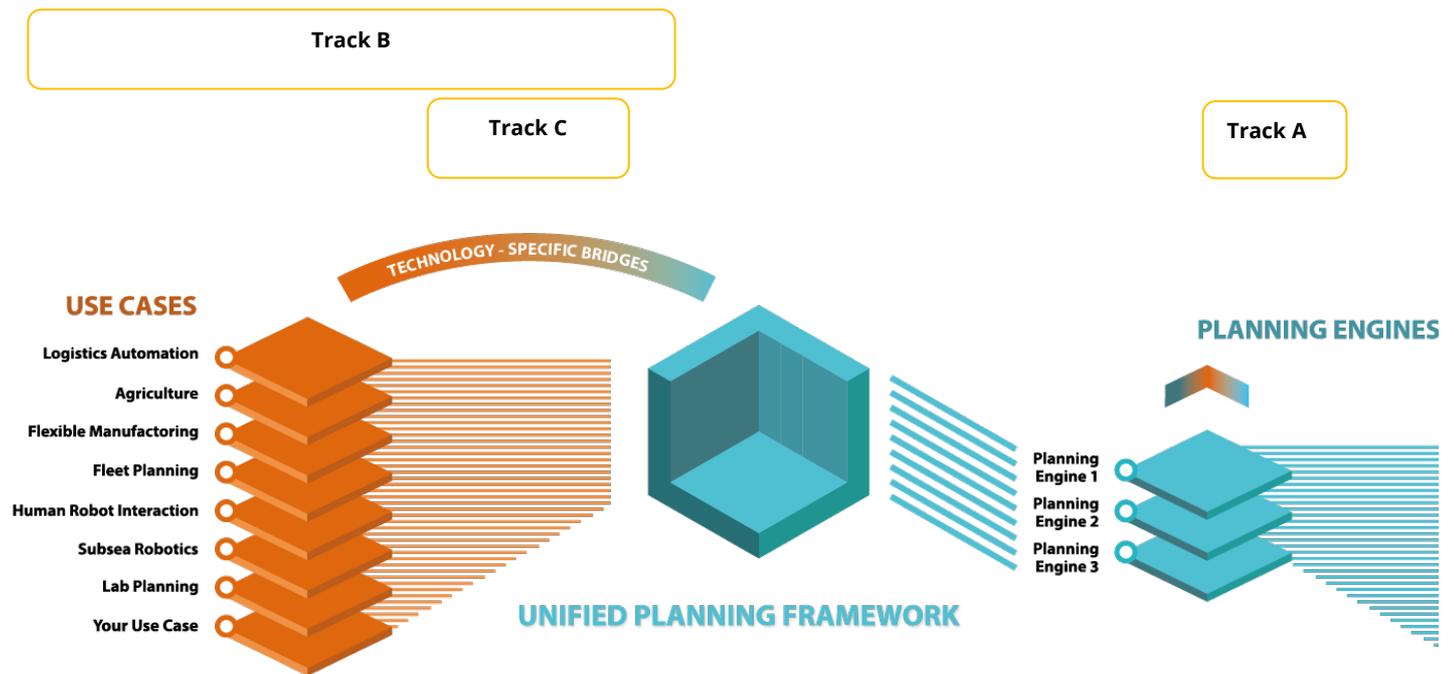


Figure 1: Open Call tracks in the AIPlan4EU architecture



- Track A: aims to engage innovators in the development and integration of new planners in the AIPlan4EU ecosystem. Applicants should present a planner capable of solving a problem and it will provide the solution. The whole architecture will be planner-independent, so that it becomes possible to effortlessly experiment with different planning engines.

TRACK	A
Scope	<ul style="list-style-type: none"> • The applicant is expected to propose the integration of a “planning engine” in the Unified Planning Framework (UPF) (https://github.com/aiplan4eu/upf) developed by the AIPlan4EU project. • The UPF is a python library allowing the programmatic modeling, manipulation and solving of planning problems. The UPF is interfaced with several planning engines and embeds an automated filtering mechanism to select, among the planning engines installed on a system, the ones that are applicable for a given planning problem. • More details can be found on the project GitHub page (https://github.com/aiplan4eu/upf) and on the documentation page (https://upf.readthedocs.io/en/latest/).
Context/ environment	<ul style="list-style-type: none"> • A planning engine in this context is a software tool/library/technology relative to planning that can be adapted to offer services through the UPF interface. Examples include (but are not limited to): plan generation tools (e.g. automated planners), validation procedures (e.g. plan validators), visualization tools (e.g. plan animators), problem transformation utilities (e.g. grounders and compilations). • Example integrations of planning engines include pyperplan (https://github.com/aiplan4eu/pyperplan-upf), tamer (https://github.com/aiplan4eu/tamer-upf) and tarski (https://github.com/aiplan4eu/upf/tree/master/upf/interop).
Specifications/ integration	<ul style="list-style-type: none"> • During the execution of such projects, the AIPlan4EU consortium will be available for supporting, helping and mentoring open call winners. • AIPlan4EU project finances the integration of the proposed engine into the UPF library and the realization of a demonstrator that showcases the integration with the UPF and the tool capability. • The integration code shall be released as free software under the Apache 2.0 license, while the tool itself can be released under any license (even commercial, but preference will be given to open-source engines) provided that the AIPlan4EU consortium partners and use-case owners will be granted at least the permission to reproduce the demonstrator tests and to use the tool for evaluation purposes on the project use-cases. Moreover, we require winners to publish their integration code and planning engine as an AI asset within the AI4Europe platform (ai4europe.eu).
Expected Results	<ul style="list-style-type: none"> • The integration code shall be documented, and a final written report shall describe in detail how to use the tool via the UPF and how the integration code works. The financed projects will have a duration of 6 months and will be structured in three sprints of 2 months each plus one month for finalizing and preparing the demonstrator.
Number of projects	5



Target Applicants	Innovators (researchers, experts, students,...) and organisations (SMEs, MidCaps, larger companies, universities, research centres, labs,...)
Indicative budget	€60.000
Indicative duration	7 months
Track A Documents to Apply	https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/#call-1-for-innovators-track-A
Contact for clarification	aiplan4eu_support@fbk.eu

Table 1: Track A specification

- Track B: aims to deploy new use-cases within the AIPlan4EU framework. This call will attract small consortia of 2 entities: a use-case owner and a TSB provider (SME).

TRACK	B
Scope	<ul style="list-style-type: none"> • The application is reserved to partnerships of two distinct legal entities: an integrator realizing the TSB and a use-case provider. • The applicant is expected to propose the integration of a “Technology-Specific Bridge” (TSB) that uses the Unified Planning Framework (UPF) library (https://github.com/aiplan4eu/upf) developed by the AIPlan4EU project to offer planning-related capabilities in an existing technology/tool/framework that is useful for a planning use case to be presented.
Context/ environment	<ul style="list-style-type: none"> • A TSB is a software tool/library/technology relative to planning that integrates into an existing technology/software in order to offer services by means of planning. • Examples include (but are not limited to): adding planning capabilities to simulators (i.e. extend plant simulation tools with plan generation capabilities so that generated plans can then be simulated), integration of automated planning in logistics tools (e.g. gather data from Warehouse Management Systems to form a planning query and report the generated plan to the user), visualization tools (e.g. plan animators, plan simulators), integration of planning in existing software ecosystems (e.g. wrap UPF planning for robotic operating systems), translating existing formalisms/software libraries for decision making into planning problem and mapping-back the results.



Specifications/ integration	<ul style="list-style-type: none">· The TSB code shall be released as free software under the Apache 2.0 license, while there is no requirement concerning the technology for which the TSB serves as integration with the UPF (even commercial licenses are OK, but preference will be accorded to open-source technologies).· However, the AIPlan4EU consortium partners shall be granted at least the permission (and tools) to reproduce the demonstrator tests and to use the developed TSB for evaluation purposes on the project use-cases. Moreover, we require winners to publish their use cases and TSBs within the AI4Europe platform (ai4europe.eu).
Expected Results	<ul style="list-style-type: none">· The use-case must be described in a dedicated report deliverable and the developed TSB shall address at least some of the aspects highlighted by the use-case. Moreover, at the end of the 6 months project, the TSB shall be demonstrated and evaluated on the use-case specifications.· The AIPlan4EU project finances the realization of TSBs that must use the functionality offered by the UPF library and the realization of a demonstrator that showcases the developed TSBs on the proposed use-case.· The TSB code shall be documented, and a final written report shall describe in detail how to use the tool and how the integration code works. The financed projects will have a duration of 6 months and will be structured in three sprints of 2 months each plus one month for finalizing and preparing the demonstrator.
Indicative budget	€90.000
Target Applicants	Consortium of 2 organisations (SMEs, MidCaps, larger companies, universities, research centers, labs,...)
Indicative duration	7 months
Number of projects	7
Track B Documents to Apply	https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/#call-1-for-innovators-track-B
Contact for clarification	aiplan4eu_support@fbk.eu

Table 2: Track B specification



- Track C: aims to attract SMEs to develop TSBs for the use-cases selected from “Call for use-cases”. Both entities, TSB provider and use-case owner, will work together and validate the results.

TRACK	C
Scope	<ul style="list-style-type: none"> • Two kinds of applications (sub-tracks) are possible within this track, namely winning use-cases and Technology Specific Bridges (TSBs) for the winning use-cases. • For both tracks, we identified one domain of interest that have been selected in the context of the first open-call for use-cases. The domain is Healthcare. • The proposals in either of the following sub-tracks are expected to belong to this use case. • As additional material, applicants will find the use-case presented in the first open-call for use-cases and the slides presented during the workshop. • We expect proposals attacking problems related to the use-case. The AIPlan4EU project will also organize webinars to present the use-case to prospective applicants.
Context/ environment	<p><u>Winning Use-Cases Sub-Track</u></p> <ul style="list-style-type: none"> • In this track, only legal entities which already won an “Open Call for Use-Cases” can apply. The Alplan4EU project grants additional funding to further develop the presented use-case and to evaluate the TSB solutions that will be selected in the Track C – TSBs sub-track of this call. <p><u>Technology Specific Bridge Sub-Track</u></p> <ul style="list-style-type: none"> • The applicant is expected to propose the integration of a “Technology-Specific Bridge” (TSB) that uses the Unified Planning Framework (UPF) (https://github.com/aiplan4eu/upf) library developed by the AIPlan4EU project to offer planning-related capabilities in an existing technology/tool/framework. • A TSB is a software tool/library/technology relative to planning that integrates into an existing technology/software in order to offer services by means of planning. Examples include (but are not limited to): adding planning capabilities to simulators (i.e. extend plant simulation tools with plan generation capabilities so that generated plans can then be simulated), integration of automated planning in logistics tools (e.g. gathering data from Warehouse Management Systems to form a planning query and report the generated plan to the user), visualization tools (e.g. plan animators, plan simulators), integration of planning in existing software ecosystems (e.g. wrap UPF planning for robotic operating systems), translating existing formalisms/software libraries for decision making into planning problem and mapping-back the results.



Specifications/ integration	<p><u>Winning Use-Cases Sub-Track</u></p> <ul style="list-style-type: none"> The applicants are required to detail their use-case and provide data, examples and evaluation measurements to the TSB developers that will win the Track C – TSBs sub-track of this call. <p><u>Technology Specific Bridge Sub-Track</u></p> <ul style="list-style-type: none"> The AIPlan4EU project finances the realization of TSBs that must use the functionality offered by the UPF library and the realization of a demonstrator that showcases the developed TSBs on the identified use-case. The TSB code shall be released as free software under the Apache 2.0 license, while there is no requirement concerning the technology for which the TSB serves as integration with the UPF (even commercial licenses are OK, but preference will be accorded to open-source technologies). However, the AIPlan4EU consortium partners shall be granted at least the permission (and tools) to reproduce the demonstrator tests and to use the developed TSB for evaluation purposes on the project use-cases. Moreover, we require winners to publish their use cases and TSBs within the AI4Europe platform (ai4europe.eu).
Expected Results	<p><u>Winning Use-Cases Sub-Track</u></p> <ul style="list-style-type: none"> Moreover, we require winners to publish their use-case within the AI4Europe platform (ai4europe.eu). <p><u>Technology Specific Bridge Sub-Track</u></p> <ul style="list-style-type: none"> The TSB code shall be documented, and a final written report shall describe in detail how to use the tool and how the integration code works. The financed projects will have a duration of 6 months and will be structured in three sprints of 2 months each plus one month for finalizing and preparing the demonstrator.
Track C Kit link (use-case detailing and slides)	<p>https://www.aiplan4eu-project.eu/wp-content/uploads/2022/02/Healthcare-Use-Case-Pitch.pdf</p> <p>https://www.aiplan4eu-project.eu/wp-content/uploads/2022/02/Healthcare-Use-Case.pdf</p>
Indicative budget	<p><u>Winning Use-Cases Sub-Track</u> €30.000</p> <p><u>Technology Specific Bridge Sub-Track</u> €60.000</p>
Target Applicants	Organisations (SMEs, MidCaps, larger companies, universities, research centres, labs,...)
Indicative duration	7 months
Number of projects	1 TSBs for 1 winning use-cases (1 + 1)
Track C Documents to Apply	https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/#Call1ForInnovatorsTrackC



Contact for clarification	aiplan4eu_support@fbk.eu
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Table 3: Track C specification

1.2.1 Open Call Process

The first call for innovators will follow a systematic process to evaluate and select the third-party project efficiently. The figure below reports a view explaining how it will work.

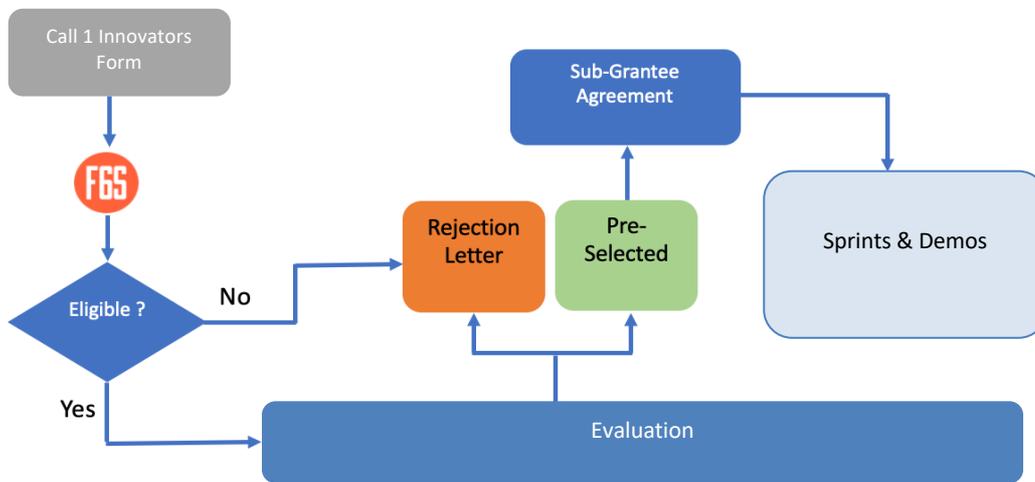


Figure 2: Open Call Process

Within the project, the funding to third parties aims to upgrade and extend AIPlan4EU technology offer beyond consortium partners and enlarge the outreach of the project deployments. For this purpose, the consortium has planned to devote a budget for the cascade funding across a total of up to:

- (i) 14 projects that propose the deployment of different tracks including the winner use-case from the calls for use cases, TSBs integrators and planners.

See the following funding table:

Call for Innovators					
Open Call # 1 (OC#1)	Topic	Budget	#projects	#months	Total
Track A	Planners	€60,000	5	7	€300,000
Track B	UC*+TSB*	€90,000	7	7	€630,000
Track C	TSB	€60,000	1	7	€60,000
	UC*	€30,000	1	7	€30,000
			14		€ 1,020,000

Table 4: Open Call 1 Innovator Briefing



The open call documents are specifically dedicated to the Open Call 1 Innovators and outline the application modalities for this call, highlighting that the winner use-case from Call 1 Use Case will be involved in the call for innovators and take part in the definition of the final requirements for the framework on par with consortium members.

This mechanism follows the principles of open innovation and is very important for the final impact of the framework. Through such open calls, we will involve organisations and innovators collecting the widest possible set of diverse application scenarios, technological needs, and use-cases.

Applicants are encouraged to submit proposals that involve different contexts and scenarios that go beyond the seven application areas (planning for space, agriculture, manufacturing, logistics, autonomous driving, automated experimentation, and subsea robotics). Based on the results of Open Call 1 Use-Cases, the project has a special interest on the healthcare and energy domains as well.

Call 1 is open for submission from 17 February (12:00 PM CET) to 20 April (5:00 PM CEST), and its indicative budget is in Table 5.

2. Announcement at EC Portal

Announcement at EC Portal	
Call Title	Open Call 1 Innovators
Full name of the EU Funded Project	Bringing AI Planning to the European AI On-Demand Platform
Project acronym	AIPlan4EU
Grant agreement number	101016442
Call publication date	17 Feb 2022 at 12:00 PM CET
Call deadline	20 Apr 2022 at 5:00 PM CEST
Expected duration of participation	7 months
Total EU funding Available	Up to €90,000
Task description	The final goal of the task is to select companies and individuals to propose planners and TSBs to be integrated to AI4EU platform. To address this goal, AIPlan4EU aims at the definition, launch, management, evaluation and monitoring of open calls, ensuring that every participant receives the best possible guidance from the assets within the consortium.
Submission & evaluation process:	Submission and evaluation criteria are available in the Guide for Applicants (Available at https://aiplan4eu.fbk.eu/apply-now/).
Further information:	Details available at: https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/

Table 5: EC Announcement



3. Support to Applicants & Kit for Application

3.1 Support to Applicant

It is available The AIPlan4EU consortium will provide information to the applicants only via email (aiplan4eu_support@fbk.eu). No binding information will be provided via any other means (e.g. telephone or another email).

- More info at: <https://www.aiplan4eu-project.eu/>
- Apply via: <https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/> or <https://www.f6s.com/aiplan4eu-oc-1-innovators/apply>
- Support team: aiplan4eu_support@fbk.eu

3.2 Kit for Application

The AIPlan4EU Open Call 1 supported material is the following:

- The AIPlan4EU Open Call Text

The present document.

- The AIPlan4EU Guide for Applicants

This document provides in detail the information to help apply to the AIPlan4EU Open Call 1 Innovators such as an abstract of the AIPlan4EU action, a description of the open-call, the modalities for application, the evaluation process, the scheme of the funding support, and how to prepare and submit a use-case proposal.

It is available at: <https://www.aiplan4eu-project.eu/wp-content/uploads/2022/02/Guide-for-Applicants-OC1-for-Innovators.pdf>

- The AIPlan4EU Application Material

The proposal templates (Tracks A, B and C) are available at:

Track A: <https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/#call-1-for-innovators-track-A>

Track B: <https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/#call-1-for-innovators-track-B>

Track C: <https://www.aiplan4eu-project.eu/call-for-use-cases/open-call-1-for-innovators/#Call1ForInnovatorsTrackC>

4. Points of Contact

The AIPlan4EU consortium will also provide information to the applicants via the F6S blog so that the information (question and answer) will be visible to all participants. No binding information will be provided via any other means (e.g., telephone or email).

- ⇒ F6S support team contact: support@f6s.com
- ⇒ Online Q&A: <https://www.f6s.com/aiplan4eu-oc-1-innovators/discuss>
- ⇒ Individual emails: aiplan4eu_support@fbk.eu