European Innovation Council

PATHFINDER CHALLENGE

Generative-AI based Agents to Revolutionize Medical Diagnosis and Treatment of Cancer

EIC Work Programme reference: HORIZON-EIC-2024-PATHFINDERCHALLENGES-01-02
Call deadline date: 29/10/2025
EIC Programme Manager: Federica ZANCA

EIC will hold an Info Session on this Pathfinder Challenge topic in spring 2025. You will be able to find the information about the Info day, when it is available, at Events - European Commission. Participation in the meeting, although encouraged, is optional and is not required for the submission of an application. A recording of this Info Session will be made available on EIC Pathfinder Challenges 2025 - European Commission.

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1. About this document

The Challenge Guide serves as guidance and background for the common understanding, participation rules and obligations for the EIC beneficiaries that are involved in the Challenge Portfolio. Contractual Obligations are further detailed in the EIC Work Programme 2025.

The Challenge Guide is a guidance document accompanying a topic of the Pathfinder Challenge call for proposals to provide further information about how portfolio considerations will be considered in the evaluation of proposals for that topic.

The Challenge Guide is prepared by and under the responsibility of the relevant EIC Programme Manager (information about the EIC Programme Managers is available on the EIC Website (https://eic.ec.europa.eu/eic-communities/eic-programme-managers_en). It complements the Scope, Specific Objectives, Expected Outcomes and Impacts, and Specific Conditions set out in the EIC Work Programme by a description of the additional categories and the portfolio considerations that will be used in portfolio building and explains how a portfolio will be built. Please note that in no case does the Challenge Guide contradict or supplant the Work Programme text.

Following the selection of a proposals to be funded under the Challenge, the Programme Manager will work together with the consortia of the selected projects to develop a strategic plan for the Challenge, including a common roadmap. This strategy plan will integrate the activities and milestones of the individual projects into a shared set of objectives and activities across and beyond the projects. It serves as a common basis for the project portfolio and may affect the project implementation - including possible adjustments, reorientations, or additional support to projects. The strategic plan will be updated in light of emerging results or issues during the implementation.

2 Scope and objectives of the Challenge as defined in the Work Programme

This section is a copy of the Challenge call in the EIC work programme text. Proposals to this Challenge are expected to explain how they relate to and intend to go beyond the state of the art, and how they interpret and contribute to the objectives of the Challenge.

Background and scope

Imaging is a crucial component of cancer clinical protocols, providing detailed morphological, structural, metabolic, and functional information. However, harnessing the full potential of the data generated through medical imaging in clinical settings remains challenging. Clinicians often struggle to combine diverse and large-scale data into a comprehensive view of patient care, disease progression, and treatment efficacy. The inability to seamlessly integrate and interpret diverse data sources result in suboptimal patient outcomes and inefficiencies in the delivery of healthcare.

The integration of traditional Artificial Intelligence (AI) with medical imaging can transform healthcare, but most existing applications are still in their infancy and must overcome a number of challenges to accelerate adoption. These include AI applications being confined to single data modalities, which restricts their overall effectiveness (Monomodal Application); inadequate and insufficient data training, leading to data scarcity and a lack of generalizability, making them less reliable across diverse

patient populations, including with regard to gender-sensitivity; and the lack of AI model interpretability, as many AI systems function as "black boxes," providing little insight into their decision-making processes. This lack of transparency limits trust in the systems and their usability in clinical settings.

The goal of this Pathfinder Challenge is to create interactive GenAI autonomous agents and/or a combination of them (super-agent) that provide clinicians with a holistic end to end perspective of patient care, throughout the entire clinical pathway. These agents aim to enhance pattern identification, reduce inconsistencies and errors in diagnoses as well as improve cancer treatment. While the focus is on GenAI, we also encourage the integration of other advanced AI technologies, such as topological and geometric deep learning, neural fields, graph neural networks, etc., which can complement and enhance the robustness and effectiveness of GenAI-based solutions in addressing the challenges of cancer diagnosis and therapy.

The Challenge will support early-stage groundbreaking research projects that will develop and validate novel approaches and concepts for integrating and interpreting multimodal medical imaging and health data. Additionally, it will involve generating reliable synthetic medical data, which will also be pooled to form a common database and used for the development of advanced algorithms.

Specific objectives

Project proposals under this Challenge should focus on one (and only one) of the following diseases: breast cancer, cervical cancer, ovarian cancer, prostate cancer, lung cancer, brain cancer, stomach cancer or colorectal cancer.
Each proposal should address both the following areas (at least one sub-objective from each of the areas):

Area 1: Technological area

i. GenAI-based tools for Integrating Multidimensional Multimodal health Data

   Investigate groundbreaking techniques and methodologies for developing GenAI algorithms that combine multidimensional (e.g. time dimension, space dimension) and multimodal data from various sources. These include multiple imaging modalities (e.g., MRI, CT, PET, X-ray), clinical data (e.g., electronic health records, lab results, structured and unstructured clinical data, pathology results, genetics and –omics data, videos, knowledge databases, and other resources). The goal is to provide a comprehensive view of the patient's condition. The developed algorithms should be capable of producing unified and actionable datasets that can be exploited for the development of the AI tools described in Area 2 (clinical).

ii. Medical Data Augmentation

   Develop GenAI models based on groundbreaking techniques that are in the conceptual or initial experimental phase for medical data augmentation. These models should be capable of creating highly realistic synthetic medical data (images, genomics data, etc.) and generating complementary data from existing sources (for example producing synthetic CT images from MRI images), to support iterative cycles of model training.

iii. Medical Knowledge Representation and Integration

Create an initial prototype GenAI model for medical knowledge representation and integration. This model should aim to develop a comprehensive and dynamic medical knowledge base, to identify discrete medical imaging features associated with demographic information and systemic conditions, to improve the interpretability of AI-based models and extract new knowledge not previously identifiable by experts without assistance.

Area 2: Clinical Area

i. Predictive Diagnosis

Develop an interactive autonomous agent capable of assessing the likelihood of a patient developing cancer by analysing their medical history, imaging data, and genetic information. The agent should provide personalised health risk predictions, enabling early detection and preventive measures.

ii. Enhance Personalized Treatment Selection

Develop novel AI algorithms and architectures that leverages multidimensional and multimodal data integration, along with synthetic data generation, to predict the optimal treatment pathway for specific patient conditions, as well as to forecast disease progression and treatment efficacy providing a comprehensive view of patient care.

Appropriate performance metrics should be considered for the continuous evaluation and testing of the scientific and technical robustness (including accurately quantify uncertainties) of all developed algorithms and architectures in Areas 1 and 2. Rigorous testing against diverse datasets is essential to ensure that the models perform reliably across various patient demographics and conditions, thereby reducing the risk of skewed results and ensuring precision from diagnoses to therapy.

Projects should also conduct proof of concept studies in controlled settings to demonstrate improved and more accurate diagnosis and treatment when compared to current clinical practice. The viability of the developed technologies should be evaluated, guiding further refinement and improvement. For instance, a super-agent could be validated for assisting and/or replacing clinicians through the whole clinical pathway of the patient, providing a holistic view of patient care, that is currently unachievable due to fragmented healthcare systems and associated expertise.

The focus should also be on enhancing the interpretability of AI models/agents, making their decision-making processes more transparent and understandable to clinicians. This could involve developing cutting-edge techniques such as causal inference methods, explainable AI frameworks, or novel visualization tools that provide deeper insights into AI decision-making processes.

The AI models developed under this Challenge are expected to comply with the EU concept for Trustworthy AI[1], relevant ethical principles[2], and the AI Act[3]. In addition to focusing on performance, careful attention must be given to data quality, transparency, privacy, and security.

Proposers are encouraged to leverage the data and tools available in the Cancer Image Europe platform[4] (deployed in the context of the European Cancer Imaging Initiative[5]) for their proposed work.

[1] https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai
[2] https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/640163/EPRS_BRI(2019)640163_EN.pdf
[3] Regulation - EU - 2024/1689 - EN - EUR-Lex (europa.eu)
[4] https://cancerimage.eu/
[5] https://digital-strategy.ec.europa.eu/en/policies/cancer-imaging

In turn they should contribute the datasets, and developed AI tools and models to the platform under agreed conditions. All datasets produced should be described where possible with metadata records in the EU dataset catalogue of the European Health Data Space (EHDS) using the Health DCAT-AP[6] metadata standard.

Projects that address only one of the two 'Areas' or other cancer types will be considered "out" of scope.

Expected outcomes and impacts

In support of the European AI Strategy[7] and the Cancer Plan for Europe[8] and the Cancer Mission[9] this Challenge looks to support the development of the next generation models for cancer diagnosis and treatment, with Generative AI.

This Challenge aims to create a collaborative environment where diverse expertise —including for example data science, informatics, oncology, radiology, pathology, medical physics, bioinformatics, geneticists, healthcare administrators, and patient advocacy groups — converges to address the complexities of developing autonomous agents for holistic patient care, through enhanced diagnosis and personalized treatment.

The Challenge aspires to significantly improve patient care and reduce pressure on the healthcare system by leveraging advanced interactive autonomous agents for diagnosis and personalized treatment. By alleviating the burdens on clinicians and ensuring compliance with the EU concept for Trustworthy AI, the initiative will enhance the quality and reliability of medical services. Economically, it promises substantial cost reductions and cost avoidance, leading to long-term improvements in healthcare efficiency and sustainability. Ultimately, this challenge will foster innovation and establish Europe as a leader in the field, delivering profound benefits to patients, healthcare providers, and society at large.

The portfolio of selected projects will be designed to deliver a set of agents/models for improved diagnosis and personalized treatment of the above-mentioned cancers. Specifically, the projects will collaborate to:

- Create a shared database of synthetically generated images to be used across all projects for the development of their algorithms;
- Compare the use of a combination of the agents in the case of multiple cancers;
- Benchmark agents for enhanced diagnosis and personalized treatment selection;
- Define innovative clinical pathways in oncology;
- Externally validate the developed agents within a project at clinical premises of another project in the portfolio;
- Develop standardized methods and frameworks for evaluating AI- Act and Medical Device Regulation (MDR)- compliant generative AI models.

The portfolio of projects to be funded under this Challenge will be composed in such a way that they address ideally all cancers mentioned in this call, apply different technologies, and provide access to

[6] https://healthdcat-ap.github.io/

[7] https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence

[8] https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/promoting-our-european-way-life/european-health-union/cancer-plan-europe_en

[9] https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe/eu-mission-cancer_en

relevant clinical facilities and research infrastructures. The following categories will be used for the composition:

Category 1 – type of cancer
Category 2 – type of technology
Category 3 – access to appropriate infrastructure data and ecosystem integration.

Specific conditions

Applications for this Challenge with elements that concern the evolution of European communication networks (5G, post-5G and other technologies linked to the evolution of European communication networks) will be subject to restriction for the protection of European communication networks.

References

The following references are just examples and are not exhaustive.

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3 Portfolio considerations for the evaluation of applications to the Challenge

This section describes how portfolio considerations will be taken into account in the second evaluation step. For more details of the full evaluation process please refer to the EIC Work Programme 2025 pages 28-35.

After the submission of your proposal, it will be evaluated in two steps:

1. The EIC expert evaluators will assess each proposal separately against the award criteria and the EIC evaluation committee will ensure consistency across scores.
2. The EIC evaluation committee, consisting of EIC expert evaluators and an EIC Programme Manager will map all the proposals above the threshold in a number of categories, sub-categories and elements stemming from the overall goal and specific objectives of the Challenge. Examples of possible categories are building blocks or subsystems, technical areas and/or competing technologies, platforms, applications areas, risk level and stage of technology readiness level, size, etc.

Following this mapping of proposals against categories, a suitable portfolio of proposals will be selected by the evaluation committee by applying portfolio considerations to propose for funding a coherent set of projects that will achieve the expected outcomes and impacts of the Challenge and maximise their impact.

Categories

All proposals of which the assessment in Step 1 of the evaluation process resulted in a score above the threshold will be mapped to the following four categories (with the clinical area added as an additional category):

Category 1: Type of Cancer considered by a proposal.
As defined by WP, each proposal should focus on one (and only one) of the following diseases: breast cancer, cervical cancer, ovarian cancer, prostate cancer, lung cancer, brain cancer, stomach cancer or colorectal cancer.

Category 2: Type of clinical area covered with possible values:

i. Predictive Diagnosis.
ii. Personalized Treatment Selection.

Category 3: Technology area

Which technological approach is used in the proposal. The three possible values are:

i. GenAI-based tools (or other advanced AI technologies) for Integrating Multidimensional Multimodal Health Data
ii. Medical Data Augmentation
iii. Medical Knowledge Representation and Integration.

Category 4: Access to Infrastructure, data and ecosystem integration
What are the research infrastructures and clinical facilities that the proposal aims to use, which large datasets do they have access to, and what are their partnerships with hospitals or research institutions for clinical validation.

Examples:
Access to infrastructure and data:

- Connection to Existing European Research and Clinical Infrastructures, e.g. Testing and Experimentation Facilities (TEFs), Euro-BioImaging, Cancer Image Europe platform, the future UNCAN.eu platform, etc.
- National Cancer/Screening Registries and Open Databases.

Ecosystem Integration

- Collaboration with Leading Clinical Institutions focused on oncology.
- Where possible, seek complementarity and synergies with other activities already funded or in the funding pipeline in the framework of the Health cluster of Horizon Europe or the

Innovative Health Initiative Joint Undertaking seek complementarity and synergies with the following actions implemented and other activities already funded or in the funding pipeline in the framework of the Health cluster of Horizon Europe.

Portfolio considerations

The process of building a balanced and impactful project portfolio will adhere to the following principles:

1. Diverse Cancer Representation

Ensure that the portfolio covers a broad spectrum of cancers, allowing for a diverse impact across different patient populations. This will be done by selecting one project per cancer type (breast cancer, cervical cancer, ovarian cancer, prostate cancer, lung cancer, brain cancer, stomach cancer or colorectal cancer), if possible, when following the selection procedure and ranking system.

2. Clinical and technological areas

While we require that each proposal considers at least one of the three technological areas and at least one of the two clinical areas, proposals that tackle as many as possible technological areas — tools for integrating multidimensional multimodal health data, medical data augmentation, and medical knowledge representation and integration—and both clinical areas (diagnosis and therapy) will be considered to constitute the core of the portfolio to be built. By addressing all relevant technological and clinical areas within your proposal, rather than focusing on just a subset, you will enhance the overall impact and alignment with the Challenge goals. This comprehensive approach can provide more robust outcomes and foster greater innovation.

3. Diversity with respect to Access to Infrastructure, Data, and Ecosystem Integration

Ensure diversity in the use of infrastructures, databases, and ecosystems, e.g., to have a diverse geographical coverage in the projects.

It is also suggested that in your proposal you make a self-assessment of how your proposals maps to the four categories by adding the following table. The evaluation team will confirm or update this and use it only in the step 2 of the evaluation.

Category	Value
Type of Cancer	
Clinical Area	
Technological area	
Access to Infrastructure, Data, and Ecosystem integration	

The selection process will be structured as follows. We start from the highest-ranked projects. For all projects with the same cancer type, the proposal with the highest score that tackle as many as possible technological and clinical areas, and a proper alignment with the access to infrastructure, data and ecosystem integration principle will be selected.

In principle it is the aim to represent all cancer types in the portfolio. However, if for a certain cancer the proposals do not convincingly fit the technology and infrastructure principle, an already represented cancer types, ensuring diverse clinical areas and/or technologies and complementary infrastructure access, might be selected.
Consequently, this means that the projects selected for funding after the second step maydiffer from the ranking list established from the first step (score-based ranking after assessment of each proposal separately).

4 Implementation of the Challenge portfolio

Once funded, projects will be expected and obliged to work collectively during the implementation of their projects under the guidance of an EIC Programme Manager. This section summarises some of the key aspects of this pro-active management which applicants should take into account in preparing their proposals.

Proposal preparation and Grant negotiations

Applicants may be requested to make amendments to their proposed project to take into enhance the portfolio. Such changes may for instance include additional tasks to undertake common/joint activities (workshops, data exchanges, joint research, etc) with other projects in the portfolio.

Based on first experience, it is proposed to foresee in your proposal a dedicated work package for portfolio activities and to allocate at least 10 person-months (see below for the purpose and examples of such activities).

If you fail to do this during proposal time, your proposal will not be scored lower during the evaluation, but in case your proposal is selected for grant agreement preparation, you will be requested to add the portfolio work package to your grant agreement. Please be aware that in that case the maximum grant you receive will not change, and you will need to find the resources for portfolio activities within the foreseen project budget.

Portfolio activities

The aims of the portfolio activities are:

1. Enhancing the development potential of each individual project, as a result of its active participation in the portfolio activities: ensuring that portfolio members can access a much higher number of relevant partnerships.

2. Enhancing the commercialisation potential of each individual project, as a result of its active participation in the portfolio activities: ensuring that portfolio members, can access the right industry partners to explore key partnerships.

To accomplish the above the Programme Manager will guide the projects to develop and agree on a strategic plan for the portfolio.

Portfolio Strategic Plan

Following the selection of a proposals to be funded under the Challenge, the Programme Manager will work together with the consortia of the selected proposals to develop a common strategic plan for the Challenge. This plan will integrate the activities and milestones of the individual projects into a shared set of specific objectives and activities across and beyond the projects. It serves as a common basis for the project implementation - including possible adjustments, reorientations, or additional support to projects. It will be updated considering emerging results or issues during the implementation. The objectives can be revised, for instance based on projects' unexpected achievements, new technology trends, external inputs (other projects, new calls…).

In particular, the Challenge strategic plan will include activities on the transition to innovation and commercialisation, and to stimulate business opportunities. These activities may be reinforced during the implementation with additional funding and expertise through pro-active management. Non-exhaustive examples of activities towards the above-mentioned aims are:

<u>Technology:</u>

- Compare Agents: Evaluate the use of a combination of agents in cases of multiple cancers to identify synergies and improve outcomes.
- Generate a Common Database: Develop a shared database of synthetically generated images to be used by projects addressing the same type of cancer for algorithm development.
- Benchmarking: Establish agents benchmarking to enhance diagnosis and personalized treatment selection across projects addressing the same type of cancer.

<u>Regulatory</u>:

- Standardized Methods and Frameworks: Develop standardized methods and frameworks for evaluating AI models in compliance with AI Act and Medical Device Regulation (MDR).

<u>Ethics</u>

- Discussing the relevant for the Challenge ethics issues, especially when within the portfolio there are projects subject to ethics reviews.
- Perform activities that support, inform, and participate in discussions around the process of putting forward relevant ethical principles and discussing the appropriate approaches for compliance.

<u>Clinical:</u>

- Innovative Clinical Pathways: Define and implement innovative clinical pathways in oncology, leveraging the diverse technologies and approaches from each project.

- External Validation: Validate the developed agents externally within the clinical premises/infrastructures of other projects in the portfolio to ensure robustness and generalizability.

Innovation:

- Considerations on early-stage commercialisation strategies: directly address the need to move from research to market, including IP management, market analysis, regulatory pathways, business model development, funding strategies, product development, and go-to-market strategies.
- Capacity Building and Training: Establish training programs for project teams to enhance their skills in emerging technologies, regulatory compliance, patenting and commercialization strategies.

Dissemination and Communication:

- Stakeholder Engagement and Communication: Organize regular workshops with key stakeholders (e.g., clinicians, patients, industry partners) to gather feedback and ensure alignment with clinical needs and market demands. Establish a board with industry experts to provide guidance on commercialization strategies.

The key operational points of this strategic plan include:

- **Development of a Strategic Plan**: Create and publish a detailed strategic plan that outlines the specific objectives, activities, and milestones to be achieved over the project's duration through the portfolio. Ensure that the strategic plan integrates activities of the individual proposals into a coherent and unified way. This should be published about 1 year after the creation of the portfolio.
- **Annual Reporting:** Generate an annual report that details the progress made with respect to the strategic plan by the portfolio group, starting from year 2 of the portfolio creation. These reports will highlight achievements, challenges, and any necessary adjustments to the plan.
- **Accountability:** Each proposal team is responsible for contributing to the strategic plan and the annual reports, providing updates on their progress and any issues encountered.
- **Collaboration and Guidance:** Under the guidance of the Programme Manager, the different proposals are expected to work and collaborate effectively on the commonly defined strategic plan objectives and activities. The Programme Manager will provide oversight and support to ensure that all projects remain aligned with the strategic plan. While the Programme Manager provides guidance, each project team must take responsibility and initiative for their respective tasks. Collaboration between teams is essential to achieve the common goals of the Challenge.
- **Strategic Plan Updates:** The strategic plan will be a living document, updated annually if needed based on emerging results, new technology trends, and external inputs such as new projects or calls for proposals. The objectives and activities outlined in the strategic plan can

be revised based on unexpected achievements, new opportunities, and insights gained during implementation.

An example of timeline and operating mechanism is given below:

Stage	Activity	Participants	Frequency	Purpose/Outcome	Timeline
1. Initial Kickoff	Kickoff Meeting	All Participants	Year 1 only	Identify key common activities, draft strategic plan, establish working groups, align goals	Within 2-3 months after grant agreement is signed for all projects
2. Activity Engagement	Activity Group Formation	Participants based on interest/expertise	As needed after kickoff	Form groups for specific activities	Year 1
3. Regular Follow-up	Progress Meetings (by Activity)	Activity Groups, (Program Manager)	Bi-Monthly	Discuss progress, address challenges, plan next steps	Year 1 – Q4 to end of portfolio activities
4. Cross-Activity Sync	Coordination Meetings	Activity Group Leaders, Program Manager	Quarterly	Ensure alignment across activities, share updates	Year 1-Q4 to end of portfolio activities
5. Annual Review	Annual Review and Planning Meeting	All Participants	Annually	Review yearly progress, adjust strategic plan, set next year's goals	Q1 of every year
6. Final Review	Final Review Meeting	All Participants	End of Year 4	Present outcomes, lessons learned, discuss sustainability	End of portfolio activities

The exchange of information for the purpose of EIC portfolio activities will fall under the conditions and non-disclosure obligations as specified in the EIC Work Programme 2025 (Annex 6, section 2).

Tools though which projects can receive additional support

Projects in the portfolio may be offered additional support, either individually or collectively, in order to reinforce portfolio activities or explore the transition to innovation. Such additional support includes:

Projects in the portfolio may be offered additional support, either individually or collectively, in order to reinforce portfolio activities or explore the transition to innovation. Such additional support includes:

- Booster grants of up to €50k (see Annex 5 of the EIC Work Programme).
- Access to additional EIC Business Acceleration Services (see https://eic.ec.europa.eu/eic-funding-opportunities/business-acceleration-services_en)

- Access to the Fast Track to the EIC Accelerator, which would follow a project review (see Annex 3 of the EIC Work Programme).
- The possibility to apply for EIC Transition if your Pathfinder project resulted in an experimental proof of concept (TRL 3), or a technology validated in the lab (TRL 4)
- Access to the EIC Market Place, once operational, to connect with innovators, investors and other selected partners.
- Interactions with relevant projects and initiatives outside the portfolio, including other EU funding initiatives as well as those supported by national, regional or other international bodies.

5. Annex 1: Template workpackage portfolio activities

WPX PORTFOLIO MANAGEMENT
Start Month 1, End Month (full project duration)
Objectives
Explore synergies and collaborations among the projects of the portfolio, to maximize the achievement of the scientific results, the exploitation potentials, the outreach opportunities with key stakeholders, the identification and overcoming of major barriers to introduce the innovation to the market ….
Specific objectives:

- **Contribute to the elaboration of the strategic plan** of portfolio and sub-portfolio activities, which is composed by a list of the specific **techno-scientific joint collaborations** between two or more portfolio projects, with the respective timeline and expected achievements. Potential synergies identified by a comprehensive in-depth analysis of shared components and complementarities amongst the portfolio members is expected to unlock additional value for each portfolio member.
- Developing a common understanding within the portfolio members of the existing and developing **regulatory environment**) in view of the future implementation of the technologies that are developed by the portfolio members. By identifying regulatory barriers for innovation, the portfolio of projects can jointly contribute to potential improvements and further development of the regulatory framework. Through common communication activities addressed at policy makers and other relevant stakeholders such as dissemination at scientific conferences or trade-fairs, social acceptance for proposed solutions can be increased, and regulatory barriers for innovation can be highlighted.
- **Sharing life cycle analysis and life cycle thinking and developing novel/common metrics or ways of benchmarking** the potential environmental impact associated with each solution is expected to contribute to the acceptance and future implementation of the technologies developed by the portfolio members.
- **Define common scenarios and strategies for commercialization and exploitation.** Identify key stakeholders such as relevant end-users, investors, supply-chain actors. Effectively communicate key outcomes of the research work of the portfolio members collectively and/or as individual project to early stage private and corporate investors focused on the same field to attract early feedback. Exchanging such techno-economic insights and commercialization scenarios with other portfolio members is expected to have more impact than individual projects can achieve and may also trigger new partnership(s). Also, collective understanding of IP strategies and IP management is expected to add portfolio value to each project.

Description

Task X.1: Portfolio management and governance This task will require regular meetings and exchanges among the portfolio projects, to identify collaborations on specific technical aspects and exchange of information, best practices, strategies, etc.. A steering committee where each project is represented will be set up and steered by the Programme Manager. It will include the kick off meeting and the annual portfolio meeting in presence, and additional regular online meetings. 4 WGs will be set up to organize and implement activities in: WG1: Technological synergies; WG2: Regulatory environment, outreach events and awareness practices; WG3: LCA activities and WG4: Commercialization, exploitation, IP protection. Each consortium will nominate a representative for each WG. A chair will be nominated from among them. The chair will be responsible to prepare meeting agendas, links to the meeting and minutes of the meetings. WG Meetings are expected to be online and to be scheduled approximately every 3 months. The exchange of information for the purpose of EIC portfolio activities will fall under the conditions and non-disclosure obligations as specified in the EIC Work Programme 2023 (Annex 6, section 2.2).

Task X.2: Portfolio actions to foster collaboration towards innovation. This task will create opportunities to nurture innovations arising from portfolio collaboration, for example: common understanding of license agreements, EIC Business Acceleration Services, access to coaching and mentoring, European IP Helpdesk services, access to additional funding opportunities such as the EIC Booster grant. To stimulate innovation opportunities, the projects shall be involved in actions aimed at strengthening the EU research community. Therefore, this task can also include: the mapping and categorization of all the stakeholders and potential establishment of key partnership(s), the sharing of best practices, the exchange of researchers, access to research facilities, etc.

Task X.3: Implementation of portfolio dissemination and communication activities Design and participate in outreach events (e.g., stakeholder matchmaking, industry trade fairs) at the portfolio level to facilitate connection with stakeholders and to showcase the technologies under development. Meetings could be restricted to portfolio beneficiaries (e.g., to discuss the progress of the portfolio as a whole) or could involve external participants (e.g., to facilitate successful completion of shared objectives by interaction with regulatory entities). Early-on common and continuous engagement with strategic AEC sector stakeholders to raise awareness of the possibility to reduce emissions by reducing and changing traditional build materials with computational design and digitalized fabrication is foreseen.

Task X.4: Techno-economic benchmark and comparative assessment Compare LCA practices and metrics of the different projects and analyse the performance of the proposed solution with the other portfolio technologies using common agreed metrics and KPI and produce a portfolio report on competitiveness, business potentials in different market segments and key barriers towards innovation of the portfolio technologies in comparison to benchmark.

Task X.5: Implementation of portfolio protection and exploitation activities Mapping, landscaping, categorization, and analysis of patents and include if needed the establishment of key partnership. Early on and continuous engagement with strategic partners and stakeholders (e.g., investors and corporations) with the aim to catalyse potential R&D opportunities and to commonly tackle investment barriers. Design and participate in events at the portfolio level to facilitate connection with stakeholders or fundraising with private stakeholders (e.g., corporates or financial investors). Exchange of the market research analysis results in between the portfolio projects.

Task X.6: Portfolio Strategic plan and other common documents: Elaboration of the portfolio strategic plan under the guidance of the Programme Manager and updated on a yearly basis. It will contain details of the techno-scientific collaborations and synergies of the portfolio projects (could be only one or more projects). It contains the actions already carried out, but also an overview of upcoming actions in the form of a roadmap. It will specify the common documents that the projects will deliver because of the other tasks specified in this work-package. Individual projects do not need to add these documents as a deliverable, they explain the contribution that they made to this report in their

corresponding annual deliverable "Report on portfolio activities". A public version of the strategic plan will be published on the EIC website at year 1 and updated annually afterwards.

Deliverable X.1: Contribution to the Portfolio Strategic Plan (single deliverable)
This deliverable is the initial project's contribution to the Portfolio Strategic Plan. It will be integrated with the other projects' contributions in the overall Portfolio Strategic Plan under the guidance of the EIC Programme Manager.
Type: R: Document, report (excluding the periodic and final reports)
Dissemination level: SEN – Sensitive, limited under the conditions of the Grant Agreement
Due date: month 6.

Deliverable X.2.i: Report on portfolio activities (i=number of each implementation year. One deliverable per year; 3 deliverables for a 36-months project and 4 deliverables for a 48-months project)
The report will present the portfolio activities that have been carried out in each reporting period and contain relevant material (e.g., PowerPoint presentations, minutes of meetings, etc.). It also explains how the portfolio activities and the EIC proactive project management approach contribute to the achievement of the project objectives and help the transition to market.
Type: R: Document, report (excluding the periodic and final reports)
Dissemination level: SEN – Sensitive, limited under the conditions of the Grant Agreement
Due date: The report on portfolio activities will be submitted every 12 months.

Final considerations

- Effort to be allocated to this work package: **10 p.m.**

- In Month 1 the project should set up an operational internal **governance** to cover the following three main roles (with at least two distinct persons that are not necessarily from the coordinator) and with responsibilities in the four aforementioned WGs under Task X.1:
  1) **Portfolio manager**, in charge of:
     - Coordination of the portfolio activities (including the writing of the task's reports and deliverables).
     - Identification and establishment of synergies, shared components and collaboration opportunities with one or more projects in the portfolio.
     - Assessment of the competitiveness of the proposed technologies for different applications.
     - Participation in data collection for monitoring the technology development.

  2) **Innovation manager**, in charge of:
     - Elaboration of the exploitation strategies and set-up of the project exploitation plan (including the IPR strategy).
     - Identification of market needs, coordination of market analysis, identification of business opportunities and fundraising options.
     - Assessment of the key stakeholders, analysis of the value chain.

  3) **Communication manager** with the following roles and tasks:
     - Defines the portfolio communication strategy.
     - Implements the portfolio communication and dissemination activities.
     - Manages a common database for events and a shared database of scientific instruments.