Call Joint R&D Project

Call 2024-2025

Physical Artificial Intelligence

for Societal Challenges

Topics and rules

**Deadline : 4 November 2024 at 2pm**

Electronic submissions only to:

funding-request@innoviris.brussels and jduplicy@innoviris.brussels

More info ?

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## Contexte et thématique JRIDC 2024-2025

To focus Brussels’ strengths towards more prosperity, resilience, sustainability and well-being, the Brussels Regional Innovation Plan (RIP: 2021-2027)[[1]](#footnote-2) identified 6 Strategic Innovation Domains (SID). This includes **5 thematic SID**:

* Climate: resilient buildings & infrastructures ;
* Optimal resource use;
* Efficient and sustainable urban flows for inclusive urban space management;
* Health & personalized and integrated care;
* Social innovation, public innovation and social inclusion.

as well as **one transversal SID**, namely:

* Advanced digital technologies & services

In this call for projects, we will focus on the transversal SID as an **enabler of the 5 thematic SID**. More specifically, within the transversal SID, this year’s topic will be:

**Physical Artificial Intelligence**

**for Societal Challenges**

This topic is an opportunity for Innoviris to look back at the origins of its JRDIC programme and its first call in 2016 dedicated to artificial intelligence. Since then, the vast amount of data available for training AI models has continued to grow. Advances in computing power, in particular the rise of powerful graphics processing units (GPUs), are also enabling AI models to process information much faster, resulting in more complex and efficient algorithms. Finally, private companies and governments are increasingly investing in AI research and development. As a result, AI is making considerable progress in various fields and has the potential to revolutionise many industries and many aspects of our lives. These developments are also bringing AI into the physical world, in full interaction with it, and no longer confined to a merely virtual space. However, ethical considerations concerning AI bias, job displacement and the potential abuse of these technologies remain crucial issues that need to be addressed alongside technological advances.

In view of the rapid evolution of this technology, its potential, but also its interactions and impacts in the real world, it is crucial that the Region and its entrepreneurial fabric take up the theme of Physical Artificial Intelligence (PAI) in the service of the common good. In social terms, PAI can transform many sectors, such as health, education and public services, by making them more accessible and efficient. For example, in the healthcare sector, PAI can enable the creation of intelligent medical devices that improve diagnosis and treatment of patients, as well as promoting access to healthcare.

From an environmental point of view, PAI can play a key role in the transition to a greener, more sustainable economy. By integrating artificial intelligence into the management of urban resources such as energy and waste, Brussels can optimise the use of resources, reduce greenhouse gas emissions and improve air quality. For example, the application of DPI in energy management can help optimise the energy consumption of buildings and integrate renewable energies more effectively.

Finally, developing this skill and expertise in Brussels is a lever for economic stimulation, thanks to the exponential growth of the artificial intelligence sector, and therefore a source of development and attraction for new companies in the Region's strategic priority areas.

In what follows, we define 'physical artificial intelligence', set out the objectives of the call and present a series of illustrative and inspiring examples.

### Définition of Physical Artificial Intelligence (PAI)

Physical Artificial Intelligence (PAI) refers to artificial intelligence systems or agents able to interact with and impact the physical world. AI steps out of the screen.

Figure 1 illustrates the three components of our definition of PAI:

1. **EYES and EARS:** a physical AI system gets data from its environment through a or a series of **sensors** such as:
* **Visual sensors:** cameras, LiDAR, depth sensors,…
* **Environmental sensors:** temperature sensors, pressure sensors, humidity sensorsn air quality sensors…
* **Proximity sensors:** infrared sensors, ultrasonic sensors, capacitive sensors,…
* **Audio sensors:** (directional) microphones,…
* **Chemical sensors:** gas sensors, smoke detectors, bio-sensors,…
* **Motion sensors:** accelerometers, gyroscopes, magnetometers (combined in IMUs – Inertial Measurement Units), force sensors,…
* **…**
1. **BRAIN**: the **AI engine**. This is the system component responsible for processing and analyzing data. Algorithms extract meaning from sensor data and make decisions. The processing can be local (edge computing) or cloud-based.
2. **MUSCLES**: the decisions of the AI system are translated into **actions** in the real-world. In the case of robotics, the physical components are motors, robotics arms or grippers capable of physically manipulating the environment based on the AI’s instructions and this happens typically on a real-time basis. Note however, that our definition of physical AI goes largely beyond robotics and any machine and/or human based action taking place in the real-world (not in the digital one) qualifies.



### Objectifs

The primary objective of the Joint R&D programme is to encourage cutting-edge academic developments that push back the boundaries of knowledge and technology, and to translate them into concrete applications through Brussels-based companies.

We are therefore inviting academic and industrial partners to submit collaborative proposals to address concrete challenges and accelerate the development of breakthrough solutions.

Companies must propose or seek to propose a complete PAI solution (three components) **that targets one (or more) of the SID themes of the Regional Innovation Plan, and demonstrates a positive social or environmental impact.**

Working closely together, the university partner(s) will carry out research on one or more of the components of the PAI solution, while the company(ies) will work on integrating the university results.

**Innoviris insists that technology is not everything and that dimensions such as ethics and social impact must be taken into account in projects**. Indeed, while artificial intelligence has become an essential lever for providing innovative solutions to complex challenges, it is crucial to identify and take into account ethical issues to ensure the responsible development and use of AI. Ethical aspects (e.g. algorithmic bias, discrimination, respect for privacy, etc.) must therefore be considered right from the project design stage. This is why we are asking for this perspective to be included in the work programme and, if necessary, for specific expertise to be involved. In addition, projects must be aligned with the European AI ACT.

Furthermore, in the interests of transparency, it is also important that end users are informed that the decisions taken or the results obtained are based on artificial intelligence algorithms.

### **Examples of inspiring PAI solutions**

In this section, we present some inspiring examples (2 per SID) that reflect the wide range of possible projects.

**# SID Climate: resilient buildings & infrastructures**

Skydio: autonomous drones for building and infrastructure inspection

The company Skydio offers a comprehensive solution for building and infrastructure inspection using these three technologies:

* **BIM Integration:** Skydio integrates seamlessly with existing BIM models. Autonomous drones equipped with high-resolution cameras capture detailed aerial imagery of the building or infrastructure. This captured data is then overlaid onto the BIM model, allowing for a highly accurate and comprehensive inspection process.
* **AI-powered Data Analysis:** Skydio’s AI algorithms analyze the captured drone imagery and BIM data. The AI can identify potential issues like:
	+ Cracks or damage in building facades;
	+ Deterioration of roofing materials;
	+ Misalignment or structural issues in bridges or other infrastructure elements;
	+ Missing or incorrectly installed components;
* Automated Reporting and Actionable Insights: The AI generates detailed reports that highlight potential problems, including their location, severity, and even potential repair recommendations. These reports are easily accessible through a cloud platform, allowing inspectors and building managers to quickly identify and address maintenance needs.

The benefits of this approach are the following:

* **Improved Efficiency and Safety:** Drone inspections eliminate the need for inspectors to access potentially dangerous areas or climb high structures, saving time and reducing safety risks.
* **Enhanced Accuracy and Data Richness:** The combination of BIM and high-resolution drone imagery provides a more detailed and accurate picture of the building or infrastructure condition compared to traditional inspection methods.
* **Cost-Effectiveness:** Regular drone inspections can potentially identify issues early on, preventing more costly repairs in the future.
* **Data-driven Decision Making:** Actionable insights generated by AI empower building owners and managers to make informed decisions about maintenance and repairs, optimizing resource allocation.

BrainBox.ai: autonomous building management

Around 15% of world’s carbon emissions stem from heating and cooling our buildings. The company [Brainbox.ai](https://brainboxai.com/) uses AI to optimize heating and cooling systems in buildings and eventually reduce emissions. Their system analyzes data from various building sensors to predict energy usage patterns and automatically adjust Heating, Ventilation and Air Conditioning (HVAC) settings in real-time for maximum efficiency and comfort. This could involve raising or lowering temperatures in specific zones, optimizing airflow, or even pre-conditioning a space before it's occupied. BrainBox.ai reports achieving significant reductions in energy use, typically between 15-25%, for buildings that implement their system.

BrainBox.ai boasts a cloud-based solution, meaning there's no need for extensive hardware installation within a building. This makes it easier and faster to implement compared to some traditional building automation systems. Additionally, BrainBox.ai's system is designed to be scalable, working effectively in buildings of various sizes and purposes.

The company offers advantages beyond just lowering the carbon footprint:

* **Improve Occupant Comfort:** By constantly monitoring and adjusting settings, BrainBox.ai aims to maintain comfortable temperatures throughout the building. This can lead to increased occupant satisfaction and potentially even improved productivity ;
* **Lower Energy Bills:** thanks to improved efficiency ;
* **Lower Maintenance Costs:** By optimizing HVAC operation, BrainBox.ai can help reduce wear and tear on equipment, potentially leading to fewer maintenance issues and extended equipment lifespan.

**# SID Optimal resource use**

AMP Robotics: AI-powered waste sortation

The [AMP Robotics](https://ampsortation.com/) company develops AI and robotic systems specifically designed for recycling facilities. Their technology excels at:

* **Advanced Computer Vision:** AMP robots use sophisticated cameras and AI to identify different types of materials on a conveyor belt at high speeds. This allows them to distinguish between various plastics, metals, glass, paper, and organic materials ;
* **Robotic Arms with AI-powered Grabbing:** Once identified, the AI guides robotic arms equipped with specialized grippers to accurately pick and sort the waste items into designated bins ;
* **Machine Learning for Continuous Improvement:** The AI system in AMP robots continuously learns and improves its sorting accuracy over time. It analyzes data from past sorting processes to refine its ability to identify and handle different materials.

AMP Robotics' AI-powered sorting systems offer several benefits to recycling facilities:

* **Increased Efficiency and Throughput:** Automating sorting significantly speeds up the process compared to manual sorting, allowing facilities to handle larger volumes of waste ;
* **Improved Sorting Accuracy:** AI can differentiate materials with greater precision than human sorters, leading to cleaner separation and higher-quality recycled materials.

AMP Robotics is just one example, and there are plenty of other companies with a focus on AI-powered waste sorting. Some companies target specific waste streams, like [Ishitva](https://www.ishitva.in/) which focuses on dry waste like paper and plastics, while others like [Metaspectral](https://metaspectral.com/) utilize hyperspectral cameras for advanced plastic identification.

Agriculture

[Naïo Technologies](https://www.naio-technologies.com/) uses artificial intelligence and robotics to develop solutions for detecting weeds, debris or foreign objects in agricultural fields, thereby optimising crop management with greater precision. Their solution is based on the following three pillars:

* **AI-guided autonomous navigation:** Naïo's robots are equipped with sensors and AI algorithms that enable them to navigate fields autonomously. Functionalities include:
	+ **Obstacle detection:** Sensors identify obstacles such as stones, debris and other foreign objects, enabling the robot to avoid them or flag them for removal;
	+ **Weed identification:** AI analyses the images captured by the cameras to distinguish weeds from crops, enabling precise, targeted weeding;
* **Automated weeding:** Thanks to the integration of AI, the robots carry out precise mechanical weeding, avoiding the use of pesticides. This system not only improves soil health by limiting exposure to chemicals, but also ensures that crops grow in a more natural and healthy environment;
	+ **Adaptation to crop conditions:** The robots adjust their weeding methods based on real-time analysis of field conditions, ensuring that interventions are always optimised for the specific conditions of the crop;
* **Predictive maintenance and monitoring:** The robots are equipped with monitoring systems that prevent breakdowns and optimise maintenance;
	+ **Continuous monitoring:** Sensors monitor the state of the robot to identify maintenance needs before breakdowns occur;
	+ **Detailed reporting:** AI compiles data on robot performance and field conditions, providing valuable insights for improved farm management.

The benefits of the Naïo Technologies solution for agriculture are :

* **Increased operational efficiency:** By automating the detection and treatment of weeds and obstacles, Naïo's robots increase the precision of agricultural operations;
* **Reduced use of chemicals:** Mechanical weeding capability minimises the use of herbicides, which is good for the environment and can reduce costs for farmers;
* **Reduced equipment damage:** By avoiding or removing debris, the risk of damage to farm equipment is minimised, extending the life of machinery and reducing maintenance costs;
* **Improved sustainability of farming practices:** By reducing reliance on chemical interventions and optimising crop management, Naïo's solutions contribute to more sustainable and environmentally-friendly farming.

**#SID Efficient and sustainable urban flows for inclusive urban space management**

Remix: actively shaping sustainable mobility with AI

[Remix](https://www.remix.com/) is a forward-thinking company pioneering AI-powered solutions for urban mobility, with a unique emphasis on **active control** strategies. They go beyond recommendations and data analysis, utilizing AI to directly influence traffic flow and prioritize sustainable transportation options. More specifically, Remix’s AI platform includes:

* **Comprehensive Data Collection and Integration:** Remix gathers real-time data from various sources, including:
	+ Traffic sensors: Data on traffic volume, speed, and congestion levels for all vehicles ;
	+ Connected vehicles (if applicable): Anonymized data on vehicle location, speed, and travel patterns ;
	+ Public transit agencies: Live information on bus locations, schedules, delays, and passenger volumes :
	+ Pedestrian and cycling infrastructure sensors: Data on pedestrian and cyclist movement patterns ;
	+ Weather monitoring systems: Information on weather conditions that might impact all modes of transportation.
* **AI-powered Traffic Management with Active Control:** Remix's AI engine utilizes powerful algorithms for real-time analysis and active control:
	+ Predictive Traffic Congestion: AI can predict potential congestion hotspots and proactively implement measures to prevent them ;
	+ Dynamic Traffic Signal Control: Beyond simply suggesting adjustments, Remix's AI can directly control traffic lights in real-time. This includes prioritizing green lights for public transit, promoting efficient flow ;
	+ Multimodal Traffic Flow Optimization: The AI considers all modes of transportation, potentially adjusting lane restrictions or implementing temporary carpool lanes based on real-time data ;
* **Active Prioritization of Sustainable Options:** Remix goes beyond just optimizing traffic flow; it actively prioritizes sustainable choices:
	+ Pedestrian and Cyclist Signal Optimization: AI can adjust pedestrian crossing signals and cycle lane signals to ensure safe and efficient movement for non-motorized users ;
	+ Micromobility Integration: Remix works with bike-sharing and scooter-sharing companies. The AI can adjust dock locations based on real-time demand, ensuring better vehicle availability ;
	+ E-scooter Speed Zone Control: (if applicable in specific locations) Remix's AI could manage designated e-scooter speed zones, prioritizing safety for pedestrians and cyclists ;

Optimising waste collection

Finnish company [Enevo](https://enevo.com/) is developing advanced solutions for optimising waste collection using artificial intelligence and connected sensors. Their system is based on several fundamental pillars:

* **Real-time monitoring of waste containers:** Enevo uses IoT sensors to monitor how full the skips are. This technology enables precise measurement of the fill level: the sensors send real-time data on the fill level of the skips. The AI analyses the data collected and sends out notifications when the skips reach a critical threshold, optimising collection times and enabling collection based on actual need;
* **Optimisation of collection routes:** By integrating fill data with AI algorithms, it is possible to propose optimised waste collection routes;
	+ **Reducing unnecessary journeys:** By avoiding the collection of unfilled skips, routes are optimised to reduce the number of kilometres travelled;
	+ **Adaptive planning:** AI adapts routes according to daily and seasonal variations in waste volumes, ensuring efficient management of resources;
* **Advanced analysis and reporting:** Enevo provides an analytical platform that collects and analyses data to continuously improve waste management;
	+ **Detailed reporting:** Collected data is used to generate accurate reports on collection efficiency, filling trends, and other key indicators;
	+ **Suggestions for improvement:** AI provides recommendations for improving waste management practices, based on analysis of the data collected.

Enevo's solution delivers the following benefits:

* + - * **Reduced operational costs:** Optimised routes and collection based on actual need minimise fuel and vehicle maintenance costs;
			* **Improved environmental efficiency:** Fewer journeys mean a smaller carbon footprint for collection operations, contributing to environmental sustainability;
			* **Increased service efficiency:** Collection becomes more responsive and tailored to real needs, improving service for end-users;
			* **Data-driven decision-making support:** Accurate data and analysis provide decision support for waste management policies, enabling more strategic planning and execution.

**#DIS Santé et soins intégrés personnalisés**

BioIntelliSense: AI for proactive chronic disease management

[BioIntelliSense](https://www.biointellisense.com/) is a company at the forefront of utilizing AI-powered wearable technology to revolutionize chronic disease management. They offer a unique solution that combines a comfortable, disposable biosensor patch with advanced AI algorithms for real-time health monitoring. The core of BioIntelliSense's system lies in their biosensor patch. Worn on the patient's torso, this patch continuously gathers a wealth of physiological data.

BioIntelliSense goes beyond just data collection. Their system utilizes sophisticated AI algorithms that analyze the collected data in real-time. These algorithms are trained on vast datasets of patient information and medical records. This allows them to identify subtle changes in vital signs that might indicate potential health issues associated with various chronic conditions.

Unlike some competitors who target specific illnesses, BioIntelliSense's platform offers versatility in chronic disease management. By tailoring the AI analysis to analyze relevant data points, the system can be used to monitor a wider range of conditions, including:

* Heart Failure: Similar to other AI-powered chronic disease management solutions, BioIntelliSense's AI can detect early signs of heart failure decompensation, allowing for prompt intervention ;
* Respiratory Illnesses: The AI can monitor respiratory rate and patterns, potentially identifying early signs of asthma attacks or worsening COPD (Chronic Obstructive Pulmonary Disease) ;
* Mental Health: BioIntelliSense is exploring the potential of using AI to analyze physiological data to detect signs of anxiety or depression, paving the way for proactive mental health management.

The real power of BioIntelliSense lies in its ability to translate data into actionable insights. The AI system can trigger alerts for healthcare providers if it detects concerning trends or potential health risks. This allows for early intervention and potentially avoids complications or hospital admissions.

BioIntelliSense stands as a prime example of how AI-powered wearable biosensors are transforming chronic disease management. By enabling continuous remote monitoring and early detection of potential health concerns, this technology can significantly improve patient care, reduce healthcare costs, and empower individuals to take a more proactive role in managing their chronic conditions.

Restor3D: reimagining Musculoskeletal Reconstruction with AI

[Restor3D](https://www.restor3d.com/) stands at the forefront of innovation, leveraging artificial intelligence (AI) and 3D printing to transform the field of musculoskeletal reconstruction. Their focus lies on creating patient-specific Implants. The Power of AI in Restor3D's Approach:

* **AI-powered Preoperative Planning:** Restor3D employs AI algorithms to analyze various medical imaging data, including:
	+ CT Scans: Detailed cross-sectional images of bones, tissues, and blood vessels in the affected area ;
	+ MRIs: Images that provide information about soft tissues, joints, and potential abnormalities ;
	+ X-rays: Images specifically focused on bones for fracture assessment or pre-operative planning;
* **Machine Learning for Personalized Design:** Based on the analysis of the patient's medical scans, machine learning algorithms in Restor3D's system can:
	+ Reconstruct 3D Bone Anatomy: Create a detailed 3D model of the patient's specific bone structure, including the joint or bone segment undergoing repair ;
	+ Identify Anatomical Variations: Analyze the scans to identify any unique anatomical features that might require adjustments during surgery ;
	+ Design Customized Implants: The AI suggests optimal implant designs specific to the patient's anatomy, considering factors like size, shape, and compatibility with surrounding bone. This personalized approach goes beyond traditional "off-the-shelf" implants ;
* **3D Printing for Physical Solutions:**
	+ Restor3D utilizes 3D printing technology to create the patient-specific implants designed by the AI system ;
	+ Biocompatible Materials: They use biocompatible materials like medical-grade titanium or cobalt chrome alloys for 3D printing the implants. These materials are safe for implantation within the body and promote osseointegration, where the implant fuses with the patient's bone over time.

The benefits of Restor3D's AI-powered 3D Printing Approach:

* **Improved Surgical Precision:** Customized implants ensure a more precise fit during surgery, potentially minimizing complications and improving implant functionality ;
* **Faster Recovery Times:** A perfect fit with minimal disruption to surrounding tissues can contribute to faster healing and shorter hospital stays for patients ;
* **Reduced Risk of Complications:** Precise implant design and placement can minimize the risk of implant loosening, infection, or other potential complications ;
* **Enhanced Patient Outcomes:** Overall, this approach has the potential to significantly improve patient outcomes in musculoskeletal reconstruction surgeries.

**#SID Social innovation, public innovation and social inclusion**

SignAll: AI-powered sign language translation

The company [SignAll](https://www.signall.live/) focuses on creating communication bridges between the hearing and deaf communities using AI and machine learning. Their approach combines mobile applications and smart glasses with the following functionalities:

* Sign Language Recognition App: SignAll offers a mobile application that utilizes a smartphone camera to capture sign language gestures;
* AI-powered Translation Engine: The app leverages advanced AI algorithms trained on vast datasets of signed language videos and their corresponding spoken or written words. This engine translates the captured signs into spoken language or text displayed on the smartphone screen ;
* Text-to-Sign Translation (Optional): Some SignAll products offer two-way communication. Users can type text into the app, and the AI system translates it into sign language animations displayed on the user's smartphone screen or projected through smart glasses.

The strengths of SignAll's AI-powered Approach are:

* Improved Communication Accessibility: SignAll's technology removes communication barriers for deaf and hearing individuals, fostering greater social inclusion and interaction ;
* Real-time Translation: The AI engine provides near real-time translation, promoting smooth and natural conversation flow ;
* Portable and User-Friendly: The mobile app and smart glasses format offer portability and convenience for everyday use.

Artechouse: immersive art

The company [ARTECHOUSE](https://www.artechouse.com/) leverages AI and sensor technology to create large-scale, immersive art experiences. ​​They connect progressive ideas, artists and audiences to stimulate innovation and creativity at the intersection of art, science and technology. They combine cutting-edge technology with artistic vision to transform entire exhibition spaces into interactive environments that respond to visitors' movements and actions. In more details,

* **Sensor Technology for Interactive Environments:** ARTECHOUSE integrates a variety of sensors to create responsive exhibits:
	+ Kinect and Depth Cameras: These sensors track visitor movement, allowing the AI to react to gestures and location within the space. Imagine walking through an exhibit and triggering changes in the projected visuals or sounds based on your movements ;
	+ Pressure Sensors: Embedded in the floor, pressure sensors can detect visitor presence and adapt the visuals or soundscapes accordingly. Stepping on specific areas could activate new elements within the exhibit ;
	+ Biometric Sensors (in development): ARTECHOUSE explores using sensors like heart rate monitors to create experiences that respond to a visitor's emotional state. Imagine an exhibit that adjusts visuals based on a visitor's calm or excited state.
* **AI-powered Visuals and Soundscapes:** ARTECHOUSE utilizes AI for:
	+ Dynamic and Interactive Visuals: AI algorithms generate and manipulate visuals displayed on walls, floors, and ceilings. These visuals can change and evolve based on sensor data or visitor interaction ;
	+ AI-composed Soundscapes: AI can generate or adapt soundscapes in real-time, creating an immersive aural experience that complements the visuals and visitor movement ;

## Rules and scheduling of the call for projects

### Programme’s objectives

The aim of the Joint R&D Project programme is to encourage collaboration between the academic and industrial sectors in the Brussels-Capital Region. This programme involves the active participation of both academic units and industrial teams with the aim of strengthening knowledge, transferring intellectual property from academic research to industry, and transforming it into solutions offering new opportunities. Companies will acquire the knowledge they lack or need, integrate the latest technology and adapt Brussels industry to the environmental and social transition, while academics will have real-life applications to implement their discoveries.

For this, in addition to being in line with the ‘Physical AI’ theme and the objectives defined above, it is expected that:

* The project involves at least one research organisation (university, higher education establishment or research centre) with at least one head office in the Brussels-Capital Region AND a company whose R&D activities are based in the Brussels-Capital Region;
* The project may thus involve the participation of more than one research organisation and more than one company. However, the balance of efforts (person-months) between academia and industry should respect a 1/3 – 2/3 balance; i.e. the sum of efforts of all partners from academia or industry should not be greater than 2/3 the total efforts of the project;
* The university teams will have to carry out industrial research activities, while the companies are expected to put the results of the research into practice through experimental development work[[2]](#footnote-3).

### Amount of funding

The projects selected at the end of the 2 phases of the evaluation process will be financed in the form of grants, according to the rates below:

|  |  |
| --- | --- |
| Micro- and Small Company | 60% |
| Medium Company | 50% |
| Large Company | 40% |
| Research Organisations | 100% |

Eligible costs are as follows:

* **Staff costs:** costs relating to staff (salaried or self-employed) insofar as they are employed for the project. Salaries must comply with the practices and scales (where applicable) of the sector of activity concerned;
* **Investment costs:** costs of tools and equipment used during the project (purchase cost/depreciation period\*duration of use in the project\*usage rate);
* **Sub-contracting costs:** this mainly concerns sub-contracting in the broadest sense. The company may, if necessary, call on relevant external expertise;
* **Operating costs:** in particular, the costs of materials, supplies and products required for the successful completion of the project.

A more detailed description of eligible costs is available in the [Innoviris accounting guidelines](https://innoviris.brussels/fr/directives-comptables-generiques).

Selection/evaluation of applications

The JRDIC "Physical AI" call for projects is divided into 2 phases:

* An initial expression of interest phase, enabling Innoviris to assess compliance with the eligibility conditions and the programme framework, as well as the project's relevance to the theme of the call for projects;
* A second phase, inviting the consortia selected during the expression of interest phase to submit a full project proposal, which will be evaluated by a jury made up of international experts and Innoviris.

### Project Set-up Grant

Given that writing a complete and solid proposal is costly in terms of time and energy and may constitute an obstacle to participation, Innoviris is offering a ***project set-up grant*** (named ‘Connect’) covering part of the related expenses to consortia selected at the end of the expression of interest phase (see ‘Selection and evaluation of applications’ below).

This grant amounts to a maximum of €7,500 per partner (with a ceiling of €25,000 per consortium). We encourage companies to devote part of this grant to studying the intellectual property aspects of the collaboration. Only consortia submitting a complete proposal will receive the grant. Interested partners should complete the application form attached to this document.

The funding is granted on the basis of European Commission Regulation 12023/2831 of 13 December 2023 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to de minimis aid.

This Regulation stipulates that the total amount of de minimis aid granted to any one beneficiary must not exceed €300,000 over any period of 3 years.

Intellectual property strategy

In an open innovation programme, it is fundamental that partners negotiate the intellectual property (IP) aspects of their project from the outset. **Innoviris requires applicants to have agreed a high level IP strategy at the time of submission of expressions of interest.** In addition, **a signed consortium agreement must be submitted with the full proposal.** The consortium agreement should define the framework for the successful implementation of the project. It is a private agreement between the partners, which defines mutual rights and obligations, and does not involve Innoviris. In particular, the agreement will define how an academic partner will be remunerated in the event of an effective transfer of intellectual property to an industrial partner.

### Scheduling :

* **August 2024 :** Launch of the call ;
* **4 November 2024 2pm :** maximum delay for Innoviris to receive :
	+ The expression of interest form (electronic submission only at funding-request@innoviris.brussels and jduplicy@innoviris.brussels)
	+ Optional: the CONNECT form (attached to the above project outline forms);
* **December 2024 :** Invitation to submit full proposals for consortia whose expression of interest has been retained. The selection of expressions of interest will be based on the eligibility requirements. However, if there is a high number of applications in regard to the budget available, Innoviris may go beyond the sole eligibility criteria and use the evaluation criteria (cf. above) to retain only the best eligible proposals;
* **28 February 2025, 14h00 :** The full project presentation form (electronic submission only at funding-request@innoviris.brussels and jduplicy@innoviris.brussels) :
* **In April and May 2025:** oral defense in front of a jury of experts and Innoviris – Innoviris evaluates the assessment aspects while the experts will assess the technical side of the project;
* On the basis of the evaluation, Innoviris will recommend to the Brussels government to fund the highest-ranked projects within the limits of the budget allocated to the call;
* **From 1 April 2025 to 1 September 2025:** projects start.

### Eligibility conditions:

* Propose a project that corresponds to the theme, objectives and scope of the call for projects ;
* The project must not have started before the application for support was submitted ;
* The application must be submitted no later than **2pm on 04/11/2024** ;

In addition, each partner must also meet the following conditions:

* Be a company or a research organisation: any company with a legal personality of any form (SA, ASBL, SC, SRL, etc.) or any research organisation meeting the definition in point 16 ff of the Framework for State Aid for Research and Development and Innovation 2022/C 414/01 (universities, higher education establishments, De Groote centres, etc.) on the closing date of the call;
* **Not be in financial difficulty**: see point 20 of the Guidelines on State aid for rescuing and restructuring firms in difficulty other than financial institutions. This aspect only concerns companies that have been in existence for more than three years;
* **Not already benefiting from public support for the tasks included in the project** (prohibition of double funding);
* **Have at least one place of business in the BCR;**
* Demonstrate the company's ability to **finance its share of the project**, where applicable;
* Where applicable, have fulfilled its **obligations** to the Region in the context of previous aid.

### Evaluation criteria

In addition to the contribution to the main objective of the call and the introduction of a collaboration agreement between the partners (see "Intellectual Property Strategy" above), projects will be assessed on the basis of the following 5 criteria[[3]](#footnote-4):

* **State of the art, Innovation and project objectives:** The project objectives must be clear and concrete. In addition, the project must demonstrate the excellence of the research programme and contributions beyond the current state of knowledge for the research centre, as well as demonstrating the existence of technical challenges for the company ;
* **Feasibility and implementation:** the work programme must be relevant and realistic in terms of tasks, budget, expertise and resources ;
* **Strategic and economic impact:** the activity covered by the project must demonstrate real potential for creating value. The underlying assumptions must be set out in figures in a financial plan, demonstrating the economic sustainability of the activity studied. The project must be in line with the organisation's overall strategy and reflect a viable business model ;
* **Societal impact:** the activity covered by the project must demonstrate a social and/or environmental impact, as well as an impact on the Brussels ecosystem ;
* **Relevance of the collaboration:** the consortium must demonstrate the relevance of the collaboration to the project as a whole, and that the management of the collaboration is part of a concrete and effective strategy, particularly in terms of technology transfer from academia to industry and synergies between the partners.

Protection of personal data

The personal data collected by Innoviris, the data controller, by means of this form is for the purpose of processing your application for a grant (which involves, in particular, analysis and evaluation by Innoviris and an external jury). Processing is necessary for compliance with a legal obligation to which the data controller is subject (i.e. the non-economic ordinance and its implementing decree) and for the performance of a task in the public interest or in the exercise of official authority vested in the data controller. No data is shared with third parties without the prior consent of the data subject or unless Innoviris is required to do so by law. Innoviris makes every effort to guarantee the confidentiality and security of the data processed. The retention time will be that necessary to achieve the purposes of the processing concerned. If you have any questions or wish to apply your rights under Articles 15 to 22 of the GDPR, please contact dpo@innoviris.brussels or consult our "privacy" webpage.

### Information et contacts

Further information can be obtained from Jonathan Duplicy, jduplicy@innoviris.brussels, 02/600.50.52.

**Project presentation form**

**Deadline: 4 November 2024 at 2pm**

**[English is the preferred language but submissions in French and Dutch are welcome]**

One-page overview

|  |
| --- |
| **Explanatory note to be deleted** |
| Please fit the content into one page |

Project Title: …………………………………………………………………………

Project Keywords: …………………………………………………………………………

Project Duration: xx months

Project Partners: …………………………………………………………………………

 …………………………………………………………………………

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Project Summary [NB. This summary might be used to anticipate the selection of experts. Please be as detailed as possible] :

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Consortium presentation

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| **Explanatory note to be deleted** |
| * Please copy/paste the relevant tables if the consortium is made up of more than two partners. Each table should fit in one page.
 |

**Research Organisation(s)**

|  |  |
| --- | --- |
| Research organisation | Name: …………………………. |
| Research unit | Name: …………………………Research activities: …………………………………………………………………………..…………………………………………………………………………………………………………..………………………………………………………………………………………………………….. |
| Persons in charge | Person legally authorised to bind the organisation: Name: ………………………… Position: …………………………Administrative manager for the project:Name: ………………………… Position: …………………………E-mail: ………………………… Telephone number: …………………………Technical and scientific manager for the project:Name: ………………………… Position: …………………………E-mail: ………………………… Telephone number: ………………………… |
| Role in the project | *Describe the role of the Partner in the project and the specific skills he will bring to the project* |

**Company(ies)**

|  |  |
| --- | --- |
| Company | Name: …………………………..Company No. ………………………….Bank account No. …………………………. [Please append a bank identification document ]Sector: …………………………Size: micro-small-medium-large company**Please provide the company’s 2023 accounts in an annex.** |
| Company Division | Name: …………………………R&D activities: …………………………………………………………………………..…………………………………………………………………………………………………………..…………………………………………………………………………………………………………..………………………………………………………………………………………………………….. |
| Persons in charge | Person legally authorised to bind the organisation: Name: ………………………… Position: …………………………Administrative manager for the project:Name: ………………………… Position: …………………………E-mail: ………………………… Telephone number: …………………………Technical and scientific manager for the project:Name: ………………………… Position: …………………………E-mail: ………………………… Telephone number: ………………………… |
| Role in the project | *Describe the role of the Partner in the project and the specific skills he will bring to the project* |

Presentation of the project

**Goals**

*2 pages:*

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**Innovative nature**

*1 page: Explain how the project is innovative both from an industrial and an academic point of view*

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**Match with the call topic**

*Half a page: Explain how the project matches with the call topic (Physical AI applied to thematic SID)*

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**Assessment of the project outcomes**

*1 page: Explain how results will be assessed both from a business and an academic point of view (jobs, expertise, growth, publications, spin-offs, etc.) and the impact the project will have on the Brussels Region from a social, environmental and ecosystem perspective.*

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**Budget estimate**

-Total Budget estimate: xx €

-Total Subsidy estimate: xx €

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| **Explanatory note to be deleted** |
| * Please copy/paste the table below and rename the title to cover the whole consortium.
* The budget is not definitive at this stage and will be readjusted at the Full Project Proposal stage.
 |

|  |
| --- |
| **Partner X** |
| Estimated effort (persons/month) | X MM  |
| Provisional budget | 0 €  |
| Funding rate | **X %**  |
| Subsidy | 0 €  |
|  |  |
|  |  |
|  |  |

Signatures

|  |
| --- |
| **Explanatory note to be deleted** |
| * Please copy/paste the table below and rename the title to cover the whole consortium.
 |

|  |
| --- |
| **Partner X** |
| By signing the document, I certify that (please tick the boxes):

|  |
| --- |
|[ ]  I have read and agree to the programme guidelines; |
| [ ] [ ]  | All the information provided in this document is correct;I am attaching the 2023 accounts (for industrial partners);  |
|[ ]  The IP aspects of the project have been discussed with the other partners and an IP strategy has been agreed upon; |
|[ ]  I am aware that a signed consortium agreement will be requested at the same time as the submission of the full proposal (if the expression of interest is retained). |

Name (legal representative): …………………………..Position: ……………………….Signature and date:  |
|  |

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| **CONNECT 2024**  |

**Request for Subsidy**

***One form per participant***

**Name of the applicant**

*"Project title"*

|  |
| --- |
| **Type of Partner** |
| [ ]  Academia[ ]  Company  |
| **Budget**  | **€***XXXX*  |
| **Funding rate**  | *%* |
| **Subsidy requested (max € 7,500)** | **€**  |
| **Period**  | **1 December 2024 to 28 February 2025** |

**General context:**

In order to encourage the teaming up of academic partners with companies to set up interesting R&D projects in the field of health, Innoviris provides the possibility of covering parts of the costs associated with preparation. A maximum amount of € 7,500 can be granted to each partner in the consortium (with a total cap of € 25,000 per consortium) in order to cover the personnel costs of the person(s) in charge of discussing, negotiating and writing the proposals, and also, if needed, legal advice on intellectual property issues.

**Process:**

* The application form for set-up support should be submitted to INNOVIRIS together with the expression of interest form before 4 November 2024 at 14:00;
* If your expression of interest is selected and the consortium is invited to send in a full project proposal, your CONNECT subsidy will be accepted upon submission of the latter. Should no full proposal be submitted, the partners will not be eligible for the CONNECT subsidy, and the costs incurred will not be covered; your CONNECT application will also be automatically rejected if your expression of interest is not selected.
* Each partner of the consortium can submit a CONNECT form, and the consortium shall ensure that the maximum amount does not exceed the limit;
* The CONNECT subsidy covers the period between the submission of the expression of interest and the full proposal;
* Expenditure can be covered up to the date on which the final project proposal is submitted to Innoviris;
* Cost statements must be submitted within two months of the submission of the full proposal;
* For companies only: as this subsidy is considered as de minimis aid, a sworn statement should be attached to the CONNECT form (see Annex 1).

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Detailed description of the preparatory work and necessary actions for setting up the project

|  |
| --- |
| **Informative note to be deleted** |
| Please describe in detail all actions that will be undertaken for setting up the full proposal, and for which you are requesting funding from the Region (drafting of full proposal, meetings, etc.).  |

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Budget for setting up the project

|  |
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| **Explanatory note to be deleted** |
| **Copy and paste the table below** Draw up the budget for the project preparation for the relevant period (including sub-contractors), using the template provided If your organisation is liable for VAT, the expenses to be taken into consideration should not include VAT.Admissible costs cover:* staff costs incurred in the context of setting up the project,
* legal advice on IP subcontracted.

Only expenses incurred after Innoviris has made a positive decision on the expression of interest and after submission of the full proposal will be covered. **Staff costs:**These include expenses relating to the remuneration of the team in charge of setting up the project (local coordinators, researchers, etc.). Applicants should distinguish between employees (1.1) and self-employed workers (1.2). The average person/month cost shall be considered as an average of the unit cost for the different members of the team (local coordinators, researchers, etc.) of the specific partner. Each amount should be calculated on the basis of an average of costs, meaning that salary slips or invoices should be submitted at the stage when expenses are verified. **Overheads:**This is a fixed amount to cover additional costs incurred as a result of the setting-up of the project (secretariat, bookkeeping, telecommunications, inspections, travel in Belgium, etc.). The fixed amount is set at 10% of the amount for salaried staff costs (1.1).**Subcontracting costs:**These costs cover the expenses linked with legal consulting services in order to solve IP questions during the preparation of the project.**Financing rate:*** 70% for companies
* 100% for research organisations
 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1.** | **Staff costs** |  |  | **€** |
| **1.1** | **Employees/salaried staff** |  |  | **€** |
|  | ***Number of person/months for the preparation of the project*** | ***Average person-month cost[[4]](#footnote-5)*** | ***Total***  |
|  |  |  | € |
| **1.2** | **Self-employed staff** |  |  |  | **€** |
|  | ***Number of person/months for the preparation of the project*** | ***Average person-month cost*** | ***Total***  |
|  |  |  | € |

|  |  |  |
| --- | --- | --- |
| **2.**  | **Overheads**  |  **€** |
|  | 10% of **salaried** staff costs |  |

|  |  |  |
| --- | --- | --- |
| **3.**  | **Subcontractors**  | **€** |
|  | Legal IP services  | € |

|  |  |
| --- | --- |
| **TOTAL** **INTERVENTION RATE** |  **€****%** |
| **SUBSIDY REQUESTED** | **€** |

Authorisation and signature

By signing the document, I certify that (please tick the boxes):

|  |
| --- |
|[ ]  I have read and agree to the programme guidelines; |
|[ ]  All the information provided in this document is true and accurate; |
|[ ]  I authorise Innoviris to proceed with the necessary investigation for the examination of this application. |

**Signature by the legal representative:**

Name: …………………………..

Position: ……………………….

Signature & date:

Annex 1- Declaration of Honour (only to be filled in by companies)

**Sworn Statement**

*I, Mrs/Ms/Mr …..., in my capacity as administrator, manager, director of the company:*

*Name of Company: ….*

*Address: …*

*Company Number: …*

*Having submitted an application for funding for the project entitled "..... " in the framework of Joint R&D Project 2024 – Physical Artificial Intelligence for Societal Challenges*

*Subsidy requested:* ***……. €***

*This intervention of the Brussels-Capital Region is granted to me by reference to European Commission Regulation 2023/2831, dated 13 December 2023, concerning the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union for de minimis aid.*

*I hereby acknowledge that the amount of the subsidy mentioned above does not bring* ***the total amount*** *of aid already granted to me under said Regulation* ***to an amount exceeding € 300,000 over a period of 3 fiscal years****.*

*This limit shall apply regardless of the form of the aid or the nature of the subsidising entity. The amount of aid granted in this case must therefore be taken into account if I receive further de minimis aid at a later stage.*

*I hereby declare on my honour that the present statement is truthful and complete*

*Date: Signature*

1. In French: <https://innoviris.brussels/sites/default/files/documents/innoviris_plan_regional_innovation_pri_digital_fr.pdf>

In Dutch: <https://innoviris.brussels/sites/default/files/documents/innoviris_gewestelijk_innovatieplan_gip_digital_nl.pdf> [↑](#footnote-ref-2)
2. As defined in the ordonnance of July 27th 2017 designed to promote research, development and innovation by granting aid for economic purposes to businesses and research bodies treated as businesses, and in particular Articles **13** and **14** thereof. [↑](#footnote-ref-3)
3. Pursuant to the Ordonnance of 27 July 2017 aimed at promoting research, development and innovation by granting aid earmarked for economic purposes in favour of businesses and research bodies treated as businesses, and more particularly Articles 13 and 14 thereof. [↑](#footnote-ref-4)
4. This is the average cost for the various types of profiles working on the preparation of the full proposal [↑](#footnote-ref-5)