

29/04/2024

PENELOPE Early Adopters Programme

Terms and conditions

APPLICATION AND SELECTION TO THE PENELOPE EARLY ADOPTERS PROGRAMME

The [PENELOPE](#) is a H2020 project that aims at helping the European large-part manufacturing sector to achieve superior quality and precision while allowing the fast deployment of products highly customised for unique customer needs.

Together and for a period of 48 months as of 1 October 2020, PENELOPE's extensive and multinational [partnership of 31 European organisations](#), led by AIMEN, is developing an end-to-end digital manufacturing solution for a flexible and more precise manufacturing of large-parts in novel connected factories (PENELOPE solutions). PENELOPE's solutions will allow factories to release highly customised and value-added products while reducing reconfiguration time. While developing the solutions PENELOPE Partners relies on a modular, flexible and worker-centric approach, targeting key labour-intensive and non-ergonomic tasks while preserving workers' knowledge and skills.

This Early Adopters Programme (EAP), is addressed to European manufacturing interested in acquiring competitive knowledge, methodology and tools for intelligent, high-precision large-parts manufacturing from PENELOPE Partners. The duration of the EAP will depend on the selected/assigned services/packages and the Host. The EAP Open Call starts on May 6 10:00, Brussels Time and will be open until June 21, 2024 23:00, Brussels Time.

For this, 6 (six) Open Didactic Factories, who are PENELOPE solutions owners (the Host Entity or the Host), will offer a series of supporting services and onsite training related to large-scale manufacturing free of charge to a minimum of 6 (six) selected applicants (participants). The participants will be those that not only meet the [requirements](#), but also that best align with the PENELOPE Project [objectives](#), fit its main goals and maximise the potential impact of the PENELOPE solutions and methodology.



1. WHO CAN APPLY?

- Any **European manufacturing company** interested in acquiring competitive knowledge, methodology and tools for intelligent, high-precision large-parts manufacturing from the PENELOPE Partners and registered in any [Member State of the European Union](#) and its Overseas Countries and Territories (OCT) or in any [Horizon 2020 Associated Country](#) or in the United Kingdom.
- Your application should be aligned with the [goals and objectives](#) of PENELOPE and the additional scope of the services offered by the Host, as described in [section 2 What do we offer](#).
- The application must be submitted in English and within the deadline established in this document.

2. WHAT DO WE OFFER?

- We will select a minimum of **6 (six) companies** to benefit from **the PENELOPE solutions** free of charge.
- Selected entities will be able to choose one, the most suitable training and service for their production process among all PENELOPE solutions listed below and [here](#). Please note, that the PENELOPE solutions (**services** and **onsite training** are forming the packages, as it is described below) may have specific additional requirements to be followed.

Available PENELOPE solutions are:

Package	Name	Package description
Didactic Factory 1 – Host institution: AIMEN		
Digital Twin Package 1	SERVICE: ASS and Digital Twin	Process monitoring and orchestration using Asset Administration Shell (AAS). Viability study. Process monitoring and Digital Twin.
	TRAINING: Training session on ASS	Introduction to the use of Asset Administration Shell (AAS) for the modelling of Digital Twins. Introduction to the AAS structure and submodels definition. Introduction to the package explorer and creation of different models from practical exercises. Introduction about standards related to AAS modelling.



Package	Name	Package description
Defectology in arc welding processes Package 2	TRAINING : Training on welding defects and inspection	Introduction on basic principles on arc welding. Introduction to the correlation between process parameters with the melt pool in arc welding processes. Introduction of non-destructive methods. Introduction to welding evaluation and defect detection. Introduction to the labelling of welding defects and defect detection principles.
Robotics Package 3	SERVICE : Collaborative robotics	Show potential advantages of the use of collaborative robots for industrial applications.
	TRAINING : Basic concepts on robot safety for shared workspace with robots.	Introduction to the use of collaborative robotics. Introduction to the ISO/TS 15066:2016 standard. Description of safety requirements for collaborative industrial robots and guidance on collaborative industrial robot operation. Introduction to Speed and Separation Monitoring concepts for collaborative robotics applications. Introduction to hand-guiding principles for intuitive and flexible programming.
Didactic Factory 2 – Host institution: TUD (SAM XL)		
Training Package 4	SERVICE: Robot Operating System (ROS)	The Robot Operating System (ROS) enables you to quickly build robotic applications through access to a large set of open-source software and tools. Over the years, ROS has become the essential tool for robotics.
	TRAINING: Robotics Operating System (ROS) course	<ul style="list-style-type: none"> • How to use ROS communication tools (topics, services) to exchange information between functional modules. • How to use ROS interfaces (services and actions) to exchange information between functional modules and create a robotic task. • Visualisation and creation of a custom environment with a robot.
Demo/ Consultancy Package 5	SERVICE: Large workspace, high precision robotics	Industrial robots with high payload and large workspace are crucial to bring the advantages of Industry 4.0 in the Aerospace sector, like many other large scale manufacturing industries. However, their poor multidirectional repeatability (worse than the unidirectional repeatability) and volumetric positioning accuracy (typically ≥ 1 mm in real working conditions) justify their rather limited use in large parts manufacturing.
	TRAINING:	In this course we will go through challenges encountered at SAM XL, during the PENELOPE and other past projects, and our



Package	Name	Package description
	Large workspace, high precision robotics course	accumulated expertise and implemented solutions when working towards increasing large scale robots' accuracy.
Didactic Factory 3 – Host institution: TECNALIA		
Training Package 6	SERVICE: Hand-guiding robotics	This course will focus on Hand-guiding robotics technology and applications in the manufacturing sector.
	TRAINING: Hand-guiding introduction and applications	Robot hand-guiding applications enable operators with no prior experience in robotics to co-manipulate large parts with robots. Human-robot co-manipulation usually relies on operators to control and lead the manoeuvre.
Demonstration Package 7	SERVICE: Cable Robotics	This demonstration service will focus on Cable robotics technology and applications in the manufacturing sector.
	TRAINING: Introduction to Cable Robots: fundamentals and applications	Participants at the demonstration will: <ul style="list-style-type: none"> • Receive an overview of Cable robotics equipment and different configurations. • Show and test how Cable robotics could enhance complex manipulation of large parts in industrial settings in a controlled and precise way. • Analyse industrial case studies enhanced by Cable robotics and discuss potential applications of this technology in their manufacturing processes.
Didactic Factory 4 - Host institution: LMS		
Training Package 8	SERVICE: Augmented Reality	This demonstration service will focus on the facilitation of professionals in the manufacturing sector, including engineers and operators to harness the power of Augmented Reality (AR) technology within industrial settings. The service will explore practical applications of AR technology, demonstrating its utilisation in delivering step-by-step instructions for intricate manual tasks. Participants will explore how AR can revolutionise human-robot collaboration by seamlessly integrating relevant information and guidance for operators, but also engineers engaged in robot programming.
	TRAINING: AR applications in manufacturing	Within the course the participants will:

Package	Name	Package description
		<ul style="list-style-type: none"> - Gain an in-depth understanding of the principles and fundamentals of Augmented Reality, exploring its potential in revolutionising manufacturing processes. - Discover how AR can facilitate seamless human-robot interaction by overlaying contextual information onto the workspace, ensuring optimal coordination and communication and more.
Training Package 9	SERVICE: Virtual Reality	This service is tailor-made for professionals in the manufacturing sector, including engineers and operators, who are eager to leverage Virtual Reality (VR) technology for the design of ergonomic and efficient manufacturing processes. Through hands-on experiences, engineers and operators will learn to design workspaces and procedures that align with ergonomic principles and streamline operations. In addition, the participants will be introduced to evaluating their designs by using ergonomics and lean principles-based metrics.
	TRAINING: VR for human-centric tasks design in manufacturing	<p>Within the course the participants will, among others:</p> <ul style="list-style-type: none"> - Discover the basic principles of Virtual Reality and how it transforms manufacturing by prioritising the operators' experience and human well-being. - Explore how VR facilitates collaborative task design and encourages input from engineers, operators, and other stakeholders, ensuring a holistic approach to process refinement - Analyse real-world examples of VR applications in human-centred manufacturing and learn from industry best practices to effectively implement VR solutions.
Training Package 10	SERVICE: Collaborative robotics	This service demonstrates a comprehensive exploration of state-of-the-art technologies designed to enhance safety, efficiency, and operational excellence in a range of scenarios, including human-robot collaboration, and process quality in industrial settings.
	TRAINING: Workshop on sensing and safeguarding technologies in industrial environments	<p>Within the course the participants will, among others:</p> <ul style="list-style-type: none"> - Analyse practical case studies showcasing successful implementations of advanced safety and vision technologies, gaining insights from tangible examples and best practices. - Engage in practical labs and simulations to gain hands-on experience configuring and utilising advanced safety and vision systems. - Discover cutting-edge vision-based methods to control robots, encompassing human-robot interaction via gestures and collision avoidance.



Package	Name	Package description
Demonstrator Package 11	SERVICE: Collaborative robotics	This service is focused on the perception systems and AI-based algorithms to provide the necessary information for autonomous reasoning about the status of the robots' environment and process results. The main features that are demonstrated are the in-process robot control to prevent process errors, the automated adaptation of the robots' actions and toolpath based on the recognized environment, the real-time update of the workstation's Digital Twin based on the shopfloor status and robots' behaviour adjustment based on a continuous tracking to minimise safety risks. Insights into the hardware and software to be used can also be provided.
Didactic Factory 5 - Host institution: BIBA		
Demo/ Training Package 12	SERVICE: Opportunities and challenges of digitization	The service will address opportunities and challenges of digitization (in particular for SMEs) by offering interactive access to TELEGON, a software demonstrator, which aims to reduce the complexity of IIoT by its GUI without limiting restrictions for used hardware. TELEGON's information exchange with 3rd party applications along a process chain is based on the AutomationML standard, PENELOPE's Backbone for the Digital Thread. The illustrative industrial scenario refers to the automated design and robotic welding of fitting pipes to illustrate feedforward and feedback loops of information along a process chain.
	TRAINING: TELEGON – Hands on	Learners can modify a pre-designed fitting pipe in CAD (e.g. by moving a pipe segment) and follow the instructions in TELEGON to transfer the new "to-be models" to a miniaturised robotic manufacturing cell. Along the way, learners are motivated to check the exchange of information via AML files, e.g. with robot simulation software, to understand the challenges and constraints of interconnected industrial applications and the "hand-over" to industrial robots itself. TELEGON's integrated OPC-UA access to DF robots will illustrate process monitoring and IoT challenges.
Consultancy/ Training Package 13	SERVICE: Robotic welding & collaborative robotics for "non-experts" such as SME executive	The service will introduce welding, robotic welding & collaborative robotics for "non-experts", such as SME executives willing to "automate" dedicated production scenarios. The main objective is to create awareness and discuss capabilities along with the latest achievements in robotics. A safe & secure robotic cell will allow "hands-on" and quick insights, e.g. for SME representatives aiming to understand challenges and advantages briefly.
		Theoretical knowledge & introduction (welding, co-bots etc.) will be offered via an online training course, which is hosted via Skills.move platform.





Package	Name	Package description
	<p>TRAINING: Cobots in production hands-on</p>	<p>As part of hands-on experience, learners are offered to experience manual welding with a VR welding simulator (which does not require pre-knowledge).</p> <p>In addition, learners are motivated to teach an industrial robot (universal robot) which is equipped with a fully functional welding tip dummy. Accompanying predefined simulation programming (in the commercial app RoboDK) will allow an understanding of different approaches and corresponding challenges for integrating collaborative robots into Digital Threads.</p>
Didactic Factory 6 - Host institution: CEA		
<p>Training Package 14</p>	<p>SERVICE: Extended Reality Platform</p>	<p>The Extended Reality Platform is available for providing a space dedicated to motion capture and ergonomics analysis. The room is equipped with multiple hardware and software.</p>
	<p>TRAINING: Ergonomics</p>	<p>Introduction to motion capture hardware: cameras (2D, 3D), optical sensors, inertial sensors. Introduction to motion capture data and software. Introduction to biomechanical modelling, morphology databases and musculo-skeletal models. Introduction to virtual manikin control. Introduction to ergonomics evaluation and norms. Tests with XR Ergo and basic hardware.</p>
<p>Training Package 15</p>	<p>SERVICE: Extended Reality Platform</p>	<p>The Extended Reality Platform is available for hosting collaborative VR training sessions. The room is equipped with multiple hardware and software to deploy VR content for multiple users.</p>
	<p>TRAINING: VR Tools</p>	<p>Introduction to VR headsets (Meta Quest Pro, HTC Vive Focus3). Introduction to SteamVR and OpenXR drivers. Introduction to streaming functionalities. Introduction to VR software (Unity, Unreal). Introduction to workflow basics: 3D models import, physicalization, scenarization. Tests on a simple use case with XR Twin and a VR headset.</p>



3. WHAT INFORMATION SHOULD YOU PROVIDE IN THE APPLICATION?

Together with the details of your company, we will only ask you to provide a short description of the following:

1. Your **process(s)**:
 - Description of manufacturing process.
 - Background and ambition relating to the selected solutions/package.
2. Your **envisaged results and their impact**:
 - Sector(s) addressed.
 - Current and envisaged innovation.
 - Current KPIs and expected improvement (ambitioned).
3. Your **objectives and approach**:
 - Challenges towards the implementation of the selected services/training.

4. HOW WILL WE SELECT THE PARTICIPANTS?

All applications submitted within the deadline [21.06.2024 23:00, Brussels Time] will be evaluated by an evaluation committee¹. This committee is composed by experts from the Hosts institutions. The evaluation of the applications will be made based on the provided data in the application and the specifications of the chosen PENELOPE package.

The following steps will be performed for the selection:

- We will evaluate whether the information provided in your application according to [section 3](#) is aligned with the goals and objectives of the PENELOPE Project and the selected solution/package.
- If needed, you could be requested to provide additional details to evaluate your application and such information should be provided within the timeframe specified in our communications with you.
- You may also be required to provide additional information to confirm your admissibility and eligibility.
- We will score each category defined in section 3 with a maximum of 5 points.²

¹ The evaluation committee is composed of 6 reviewers from the Hosting Entities. For further details on the entities please visit the PENELOPE website [here, https://penelope-project.eu/consortium/](https://penelope-project.eu/consortium/).

² Whilst normally the highest ranked proposals will be selected, the evaluation committee might have fair reasons to select the final participants based on a right balance on: (1) the industries covered by the participants as described in section 3 and (2) the technologies selected for training/services, ensuring all PENELOPE solutions have equal opportunity to be tested/trained on. The

We will inform you about the selection results, and, if selected, about the Host and solution/package assigned to you. All selected participants have to confirm their conformity with the assigned Host and solution/package within 7 (seven) days after reception of the formal notification via email. Upon confirmation, they will be considered as the “Participants” of the PENELOPE EAP.

5. HOW TO APPLY?

- **Submit your proposal through this [link](#)** prior to the established deadline [21.06.2024 23:00, Brussels Time].
- Only **one application for a single PENELOPE solution/package per company** is admitted. If more than one application is identified, only the last application which has been submitted in order of time will be evaluated.
- It will **not be possible to modify your application after submission**. The only exception is in case a mistake has been made in your application form or your data has changed over time, please check out [section 14](#).
- Please consider that only applications **written in English** will be evaluated.

Upon submission of the application, the applicant declares that:

- the information concerning its legal status provided is correct, complete and up-to-date;
- organisation he/she represent is not excluded under the provisions of Article 18 or 19 of the Regulation (EU) No 2021/695 of the European Parliament and of the Council of 28 April 2021 (eligible actions and ethical principles, ethics);
- there is no conflict of interest with any of the PENELOPE Consortium Partners. Consortium partners³, their affiliated entities, employees and personnel working under contract similar to employment (permanent collaborators) cannot take part in the PENELOPE EAP. All cases of potential conflict of interest will be assessed on a case-by-case basis.

The organiser of the EAP is Fundingbox Accelerator sp. zo.o. (FundingBox). Services and EAP implementation is the sole responsibility of the Hosting entities (Hosts) being members of the PENELOPE Consortium. FundingBox can not be liable for their acts and omissions, as well as for the results of the execution of the testing activities.

evaluation committee might also have fair reasons for objecting to a specific applicant, including but not limited to the ability to achieve the highest impact possible, commercial competition, as well as the existence of significant ethical concerns.

³ For further details on the entities please visit the PENELOPE website [here](#).

The PENELOPE Consortium might cancel the EAP at any time, change its provisions or extend it. In such a case we will inform all applicants about such change.

6. CONDITION FOR THE RECEPTION OF THE PENELOPE SERVICES

1. Applying in this EAP you accept (on behalf of the organisation you represent) the Terms and conditions of participation in the EAP as described in section 6 below.
2. The Participant will receive the services from the assigned Host and solution/package.
3. In case the Participant cannot use the service in nature, it will not be possible to exchange it for financial or economic compensation.

The signature of an **additional agreement with the Host** might be required.

7. COMMUNICATION BETWEEN THE PARTIES

Unless stated otherwise, or requested by the Hosts, communication (requests, submissions, formal notifications, etc.) must be made in electronic form. The Participant shall agree with the Host emails for communication. During the application phase we will communicate with you on the email indicated in the application form, you can reach us by sending an email to ines.arias@fundingbox.com

8. GENERAL OBLIGATION TO INFORM AND KEEPING RECORDS

1. The Participant must provide, after receiving the service and 6 (six) years after the end of the PENELOPE Project (30.09.24 pending extension approval) upon request of the PENELOPE Consortium Coordinator, the Host or the EC, any information and data requested in order to carry out:
 - a. the verification of compliance with the Participant's obligations under the Terms and conditions;
 - b. statistical analyses and evaluation (of e.g. Project results and impact, Participant's further growth use of the obtained knowledges and/or tested solutions);
 - c. the checks/reviews/investigation and audits concerning the participation in the PENELOPE Project performed by the EC official bodies (including, but not limited to the European Commission, the European Court of Auditors, the European Public Prosecutor's Office and the European Court of Auditors);

- d. the interim and final evaluations of the impact of the Project and the services measured against the objective of the EU programme carried out by the Host or the EC.
2. The Participant must keep the original documents. Digital and digitised documents can be considered originals if authorised by the applicable national law. The Host may accept copies of documents if it considers that they offer a comparable level of assurance.

9. CHECKS, REVIEWS, AUDITS, AND INVESTIGATIONS

1. The EC may, after providing the services, carry out checks/investigation reviews and/or audits concerning the participation in the PENELOPE Project.
2. The following bodies may also carry out checks, reviews, audits and investigations — during the action or afterwards:
 - a. the European Anti-Fraud Office (OLAF) under Regulations No 883/2013 and No. 2185/9620,
 - b. the European Public Prosecutor's Office (EPPO) under Regulation 2017/1939,
 - c. the European Court of Auditors (ECA) under Article 287 of the Treaty on the Functioning of the EU (TFEU) and Article 257 of the EU Financial Regulation 2018/1046.

If requested by these bodies, the Participant must provide full, accurate and complete information in the format requested.

10. CONFIDENTIALITY

1. FundingBox, the evaluation committee and the Host might have access to the confidential and non-confidential information shared by the Participants.
2. As FundingBox, we do our best to keep all the applicant data confidential. However, to avoid any doubts, you are entirely responsible for indicating what information is confidential.
3. The Participant undertakes to keep any confidential information regarding the activities of the Host, its trade secrets and proprietary information, which the Participant will acquire in connection with the performance of the actions within EAP for the period of 5 (five) years after the end of the PENELOPE Project (30.09.24 pending extension approval). This obligation applies both during the performance of the actions described in the terms and conditions and after its termination - without the right to an additional fee.
4. The Participant and the Host may detail confidentiality provisions by concluding a separate Non-disclosure Agreement.
5. The Participant acknowledged that the EC and the EC bodies will have access to the data shared by the Participant with the PENELOPE Consortium Partner (in particular FundingBox and the Host).

6. The EC has the right to use non-confidential information relating to the Project and materials and documents received from the Participant (notably summaries for publication, as well as any other material, such as pictures or audio-visual material, in paper or electronic form) for policy, information, communication, dissemination and publicity purposes — during the PENELOPE Project or afterwards.
7. The right to use the Participant's materials, documents and information is granted in the form of a royalty-free, non-exclusive and irrevocable licence, which includes the following rights:
 - a. use for its own purposes (in particular, making them available to persons working for the EC or any other EU service (including institutions, bodies, offices or agencies etc.) or body or institutions in the EU Member States; and copying or reproducing them in whole or in part, in unlimited numbers; and communication through press information services);
 - b. distribution to the public (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting by any channel, public display or presentation, communicating through press information services, or inclusion in widely accessible databases or indexes);
 - c. editing or redrafting (including shortening, summarising, inserting other elements (such as meta-data, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts, using in a compilation);
 - d. translation;
 - e. storage in paper, electronic or other form;
 - f. archiving, in line with applicable document-management rules;
 - g. the right to authorise third parties to act on its behalf or sub-license the modes of use set out in Points (b), (c), (d) and (f) to third parties if needed for the information, communication and publicity activities of the EC;
 - h. processing, analysing, aggregating the materials, documents and information received and producing derivative works.
8. The EC and the PeneloPe Consortium Partners are authorised to publish, in whatever form and on or by whatever medium, the following information:
 - a) The name of the Participant;
 - b) The locality of the Participant;
 - c) The general purpose of the activities of the Participant in relation to the services received, in the form of the summary provided by the Participant.
9. If materials or documents are subject to moral rights or third party rights (including intellectual property rights or rights of natural persons on their image and voice), the Participant must ensure that they comply with their obligations under the terms and conditions (in particular, by obtaining the necessary licences and authorisations from the rights holders concerned).

10. Where applicable (and if provided by the Participant), the EC will insert the following information: "© — [year] — [name of the copyright owner]. All rights reserved. Licensed to the [name of granting authority] under conditions."
11. The Participant authorises the Host and the PENELOPE Consortium Partners to use its logotype and non-confidential data for promotional purposes.

11. LIABILITY FOR DAMAGES

1. The Participant and the Host shall agree on the scope of the mutual liability for damages related to Participant's participation in the EAP.
2. With the respect of the duty of confidentiality (as per section 10.1), FundingBox can not be held liable for any damages caused to the Participant or third parties as a consequence of application in this EAP and the Participant's participation in the EAP.
3. The Host bears sole responsibility for the services it provides. This means that the PENELOPE Consortium Partners are not responsible for any issues that arise specifically from the services provided by each individual Host. It is up to the Host to ensure that its services are of high quality and availability.

12. IPR

No transfer of Intellectual Property Rights (IPR) between the Participant and the Host shall take place in the implementation of the EAP and provision of the services. All issues related to IPR to the solution shall be agreed by the Host and the Participant.

13. FINAL PROVISIONS

1. Any matters not covered by these Terms and conditions will be governed by Polish law and supported by the applicable EU law, in particular:
 - a. Regulation (EU) No. 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination, and repealing Regulations (EU) No 1290/2013 and (EU) No 1291/2013;
 - b. Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union;
 - c. supplemented, if necessary, by the Polish law and, where appropriate, by the rules of general international law.
2. The Participant bears sole responsibility for abidance by its national law, in particular in relation to social security and labour law.
3. Any dispute concerning the interpretation, application or validity of these Terms and conditions should be settled amicably.

4. If a dispute concerning the interpretation, application or validity of these Terms and conditions cannot be settled amicably, such dispute shall be submitted to the Court of Warsaw.
5. Notwithstanding the preceding paragraphs, in the specific agreements between the Host and the Participant regarding mutual rights and obligations, the submission to the national law of the Host may be established.

By submitting your application you confirm that you read and understood these Terms and conditions and accept them.

14. CHANGES IN THE APPLICATION FORM

In case a mistake has been made in your application form or your data has changed over time, please contact us in English by email to ines.arias@fundingbox.com, including the following information:

- Your user name, telephone number and email address.
- Unique ID (UID) of your application form. The UID will be located at the bottom of the application form under the signature. Check [here](#) how to get it.
- The subject of the changes you want to make.

Please note that no changes will be allowed after the deadline on [21.06.2024 23:00, Brussels Time].