MASTER

Annex 3

MASTER 1st Open Call

March 2024

Submission of applications starts on 18th of March 2024, at 09:00 (CET)

Submission deadline: 31st of May 2024, at 17:00 (CET)

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Commission. Neither the European Union nor the granting authority can be held responsible for them.

Disclaimer

Table of Contents

1 Annex 3: Call Announcement

MASTER 1st Open Call

Project Acronym: MASTER

Project grant agreement number: 101093079

Project full name: Mixed reality ecosystem for teaching robotics in manufacturing

MASTER, co-funded from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101093079, foresees as an eligible activity the provision of financial support to third parties, as a means to reinforce connection among key players from research and industry, as well as to provide XR technologies for training on robotics in manufacturing.

Publication Date: 18th of March 2024, at 09:00 (CET).

Deadline: 31st of May 2024, at 17:00 (CET)

Expected duration of participation: 9 months

Maximum amount of financial support for each application: €150,000; In case of single applicants: €100,000

Call identifier: MASTER_OC1_2024

Language in which proposals should be submitted: English

Project Site: https://www.master-xr.eu/

Web address for proposal submission: https://www.master-xr.eu/open-calls/

Email address for further information: info@master-xr.eu

After a well-consolidated first wave of deploying industrial robots for automation, it is now collaborative robots that are making their way to industries. From the perspective of human workers, some of the challenges are common to both collaborative and non-collaborative robots. In every case, human workers must transfer skills to robots, meaning that robots must be programmed by human workers that know the production process and the tasks that each robot must perform in them. However, there are also significant differences when robots are collaborative.

The first main difference is that they are deployed in processes demanding much higher flexibility, producing short batches down to single unit customizations. This requires that the worker is teaching (i.e., programming) the robot very frequently, using intuitive interactive techniques.

An additional difference about working with collaborative robots is safety. Unlike with industrial robots, an operator collaborating with a robot during production is sharing the same workspace with the robot. Although collaborative robots are designed and deployed to be intrinsically safe, possible residual risks and unexpected robot movements may be stressful for the worker. For different reasons, it may also be stressful for the worker that collaboration gets interrupted or progresses slowly by the

accidental activation of safety measures, when robot and human worker interfere with each other. Both sources of stress (and potential real danger) will benefit from an improved awareness that the worker has of the robot's actions and intentions.

Vocational school students, which are going to be industry workers in the near future, and professionals in the process of upskilling, must learn how to program robots by acquiring the skills required by production at each point, resulting in safe and productive human-robot collaborations.

Exposure time working with robots is key to build such knowledge and confidence, and student groups that outnumber the physical robots available will benefit from interacting with holographic representations of robot digital twins, both in virtual reality (VR) and in mixed reality (MR). The same XR based robotics trainings can be used to train workers in companies and for production, improving process performance as well as worker experience.

More information available at https://www.master-xr.eu/open-calls/

If you have any further questions or concerns about this application process, please contact: info@master-xr.eu.

If you are worried about any of the information requested, or if you are concerned about how it is being collected, please send an e-mail to info@master-xr.eu.