



# MASTER

## MASTER Open Call Winners: Advancing XR Solutions for the Future of Industrial Training

Discover the 17 innovative projects selected through the 1st Open Call. These cutting-edge solutions will enhance the MASTER platform with novel technologies and functionalities, tested and validated by a diverse range of end users.



### AAXLP

Aims to enhance industrial layout planning by connecting AI-powered voice interfaces with XR tools, making layout design more intuitive and accessible for students and professionals.

### DREAMER

An add-on to the MASTER platform facilitating 3D content creation for virtual training scenarios. It allows realistic, risk-free simulations aimed at improving robotics training effectiveness.

### EMPOWER

Focuses on improving workplace safety across high-risk industries through XR technologies. Its modular XR-based tool offers real-time visualisation, digital assistance, safety assessment, and knowledge gathering, promoting safer and more efficient human-robot interaction.

### ERGON-XR

Offers immersive XR-based training to improve worker safety and efficiency in automated manufacturing, focusing on ergonomic risk reduction through simulated interactions with industrial equipment.

### eXRercise

Prepares Robot Operators for hazards like fires and robotic malfunctions through realistic VR training. AI and machine learning assess performance and stress in real time, adjusting difficulty to enhance safety and readiness.

### HEART

Combines VR, haptic gloves, and robotics to enable precise remote manipulation of objects, enhancing training environments where physical interaction is critical.

### i-MAX-XR

Revolutionises maritime safety training through immersive XR experiences, developing digital twins of cargo ships and providing context-aware, interactive training for enhanced safety awareness and operational efficiency.

### MANIPULAY XR

A game-based learning environment teaching users to configure and program robotic manipulators through interactive VR puzzles, enhancing their understanding of kinematics and human-robot collaboration.

### MRP

A Human-Machine Interaction solution that uses haptic gloves to enable precise robot control. This XR-based system facilitates intuitive robot programming, enhancing adaptability and efficiency in manufacturing.

### REACH

Combines various interaction modes to improve collaboration between real robots and their digital twins. Its multi-user VR/MR applications facilitate smoother communication and task performance in robotics.

### SENSE-XR

Enhances safety in high-risk manufacturing with XR and AI integration, providing real-time safety alerts and personalised escape routes via mobile devices and HMDs. It ensures critical information is accessible and easy to understand under stress.

### V-PAINT

Integrates MR technology for intuitive robotic teaching systems, enabling operators to program robots quickly and efficiently within virtual environments.

### VTBM Station

Designed to improve ergonomics and occupational safety training in the tyre manufacturing industry. Utilises hybrid XR environments and motion-tracking sensors to provide real-time feedback and enhance employee safety by reducing injury risks.

### WAVE

Introduces a multimodal system for natural human-robot interaction using IMU-based devices and haptic gloves. This technology promotes trust, safety, and efficiency in collaborative XR training environments.

### X-RAPT

Democratises robotics education through an intuitive XR application that allows users to create training scenarios for programming robots in assembly and packaging tasks.

### XR4Human-SERVE 5.0

Develops a neuroergonomic assembly workstation using XR technology to enhance productivity and worker satisfaction while ensuring a non-invasive human-robot interaction interface.

### XR4MCR

Provides a scalable, multi-user XR training platform for industrial robot maintenance. Its user-friendly interface simplifies module creation and enhances training efficiency.



These 17 projects, selected through the first MASTER Open Call, are set to contribute innovative solutions to the MASTER platform. By enhancing functionalities related to safety, human-robot interaction, training efficiency, and industrial planning, they will establish a comprehensive XR framework applicable to diverse manufacturing and operational environments.

The projects will be tested and validated by a broad range of end users, ensuring their applicability and scalability. Ultimately, the integration of these solutions into the MASTER platform will elevate the state of XR technologies in industrial training, promoting safer, more efficient, and highly immersive training experiences across various sectors.



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