



JARVIS

DRIVING HUMAN-ROBOT COLLABORATION: TELEWELDER



**Funded by
the European Union**

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Project name

TELEWELDER - Teleoperation for welders

Introduction

The manufacture and maintenance of naval defense vessels and submarines are characterized by high-mix, low-volume production processes carried out in highly constrained environments. Operators are often required to work in confined spaces and under harsh conditions, such as elevated temperatures, which generate significant physical strain and stress. These factors contribute to reduced productivity and increased quality deviations.

The TELEWELDER pilot aims to address these challenges by developing an advanced human-assistance system that enables safe, ergonomic, and adaptive remote welding operations. By integrating robotic solutions with immersive control interfaces, the project seeks to improve operator safety, enhance working conditions, and increase the efficiency and reliability of naval manufacturing processes.

How does your work align with the goals or methodology of JARVIS?

The **TELEWELDER** pilot is fully aligned with the objectives and methodology of **JARVIS**, as it leverages advanced robotics, immersive technologies, and human-machine collaboration to enhance industrial operations in complex environments.

By enabling remote and adaptive welding in confined and hazardous naval structures, the project demonstrates the application of JARVIS principles for safer, more efficient, and operator-centric manufacturing. Through the integration of **Extended Reality (XR) interfaces, real-time 3D visualization**, and **intelligent robotic assistance**, TELEWELDER contributes to the development of flexible and resilient production systems that improve both worker safety and process performance.

Upcoming focus and next milestones in the pilot's development

The next phase of the **TELEWELDER** pilot will focus on evaluating and selecting the most suitable **camera systems** and **virtual reality headsets** for the remote welding setup. This stage aims to ensure high-quality visual feedback and enhanced depth perception for the operator, enabling precise and reliable control of the welding process within confined environments.

How does your solution advance Human-Robot Collaboration in a user-centric manner?

By reducing human exposure to dangerous environments by 50%, our solution fosters safer Human-Robot Collaboration while enhancing working conditions for naval defense welders.