

## Weld quality control with Artificial Intelligence

The **AIWELD Project** by StreamOwl was one of the 5 selected during the **EARASHI Open Call 1**. It tackles one of the main challenges in the manufacturing sector, and specifically in the Non-Destructing Testing of welds: improving working conditions in terms of human stress and well-being, since expert radiographers are responsible for inspecting the reliability, quality and safety of critical components in aerospace, automotive, and home appliances industries. It provides an automated weld quality control method to detect, classify, and annotate defects in welded joints from X-Ray weld images, which which can be used as an empowerment tool by radiographers and improve their daily routine job, increase productivity, decrease stress levels, by increasing the confidence in their decisions.

### CHALLENGES

**AIWELD** integrates Artificial Intelligence into weld quality assurance processes for a human-centric approach and worker well-being in the manufacturing sector to:

- Empower radiographers with Decision Support Systems
- Improve worker safety and assist workers in their daily routine tasks
- Increase productivity
- Decrease stress levels
- Optimize manufacturing process



### SOLUTIONS



Advanced AI and Computer Vision



Real-Time Inspection

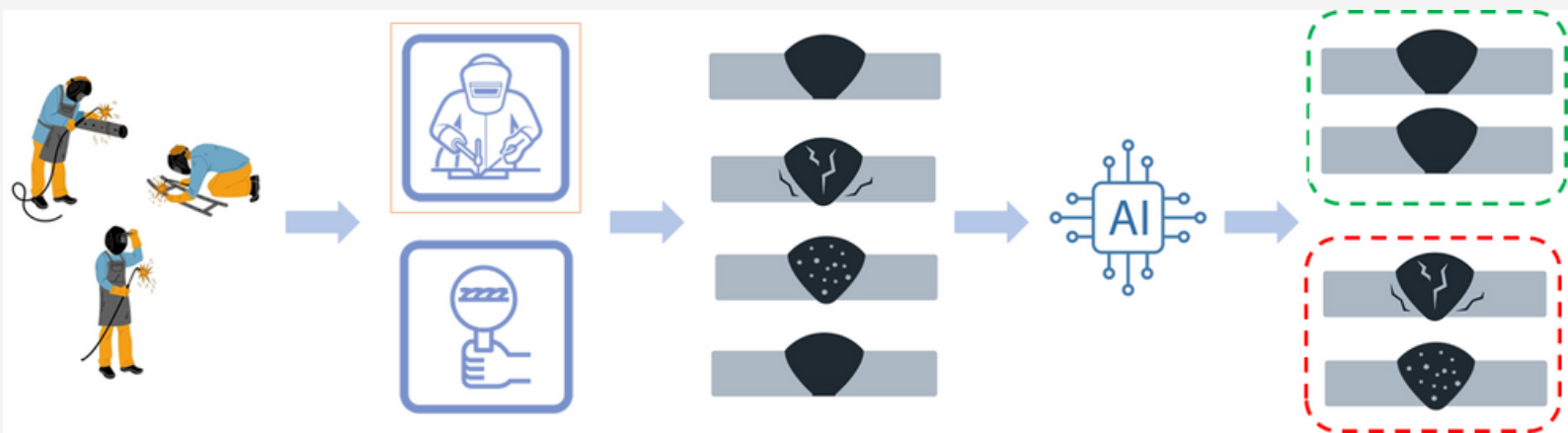


Intuitive user interface



Automated Reporting





# AUTOMATED DEFECT RECOGNITION OF WELDED JOINTS WITH AI



## MAIN GOALS

- Automated Defect Recognition
- User-intuitive DSS tool for radiographers
- Pilot Demonstration and Validation

## KEY NUMBERS

-  **100x** faster weld radiograph processing
-  **98 %** classification accuracy
-  **10** radiographers involved in software testing
-  up to **15%** scrap reduction



By integrating Artificial Intelligence (AI) with experts' knowledge we aim at transforming weld testing into an objective decision support system fully integrated in the industrial weld quality control process, which can be used as an empowerment tool by radiographers and improve their daily routine job, increase productivity, decrease stress levels, and improve the quality of the final products.



The financial support and technical consultation provided by the EARASHI project contribute significantly to the implementation of the AIWELD project, enabling the development of novel weld quality control methodologies based on AI and validation in real-life industrial environment with expert radiographers.

## GET IN TOUCH



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