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SoliDAiR

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SoliDAIR

Solid, rapid and efficient adoption of Data, AI & Robotics applications in production

Deliverable D3.1: Requirements

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Project Abstract

SoliDAIR aims to accelerate the uptake of Artificial Intelligence (AI) and Robotics in European manufacturing, using Data as an enabler. It will co-develop and demonstrate tailored solutions to digitalise and automate visual inspection and physical testing, enable predictive quality control and process optimisation. The SoliDAIR project tackles the problem of AI & Robotics systems not being extensively used in the production industry, because it is not clear whether they are safe and when or why they will fail, by researching, developing and testing methods that are as solid and trustworthy as possible to be adopted by the European industry, while being cost-efficient to develop and replicate.

New methods and tools will be developed by research and technology providers, which leverage the current state of the art in visual AI, AI for process data, and smart & collaborative Robotics. The developed technologies will be applied and demonstrated in 4 industry use cases to prove their functionality and applicability in real production environments. The objective is to improve production processes through digitalised and automated quality control for high volume, high rate and flexible manufacturing. The developed methods shall be efficiently and easily adaptable and replicable, so they can be easily applied to new use cases outside the consortium.

Public Summary

This deliverable outlines the requirements and data strategy for four defined usecases (BRO, CIE, BOS, AUT). Each use-case owner identifies system requirements, technical specifications, and technologies provided by various systems.

Positioned within Task T3.1, it closely aligns with the Data Management Plan (DMP, Deliverable D1.3), focusing on data organization and methodology-driven aspects. This document aims to facilitate successful method development, prototype rollout, and implementation into production processes, with risk analysis informing development criteria and measures. Human-machine interface (HMI) criteria, user experience, usability, and machine learning key performance indicators (KPIs) are also considered.

It addresses the interaction between AI models and production environments on technical and organizational levels, emphasizing a 360° approach. Measurable KPIs are derived where possible, enhancing clarity for development tasks. This document, along with the DMP, serves as the first quality gate for SoliDAIR, as defined in Milestone #1, successfully confirmed in a Steering Board meeting on 8.3.2024.