Now

CIRCULOOS

3. RECLAIM
AI-powered circular lifecycle decisions for industrial machine tools

ReCLAIM Consortium

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Technology provider

Role in the project:
- Develops AIRSTRAT tool for AI-powered R-strategy selection.
- Implements data pipeline for CIRCULOOS tools integration.
- Validate the circular value chain.
- Manage and coordinate the project.

Leading in:
- Develops and operates the integrated AI-powered platform for R-strategies
- Delivers digital diagnostics, REL and R-strategies predictions using AI-powered models.

Manufacturing

Role in the project:
- Produces and uses machine tools the target product of the value chain.
- It provides machine and process data and applies R-strategies to its machines.
- Validate the circular value chain.

Leading in:
- Reuses machines if components meet REL thresholds.
- Replaces only components flagged by AIRSTRAT as inadequate.

Upcycler

Role in the project:
- Interacts with the components supplier.
- Applies outcomes of the AIRSTRAT tool for remanufacturing or recycling decisions on machine tools.
- Provides data for LCA (GRETA). Validate the circular value chain.

Leading in:
- Remanufactures components with moderate remaining life.
- Recycles or downgrades components for resale or use in lower-duty machines

DIH

Role in the project:
- Provides scientific support to SMEs for LCA (GRETA), manages dissemination actions, and fosters the exploitation plan (e.g., via RAMP) to launch the service on the market.

Leading in:
- Performs LCA and assesses the overall environmental impact.
- Continuously updates models with field data and physics insights.

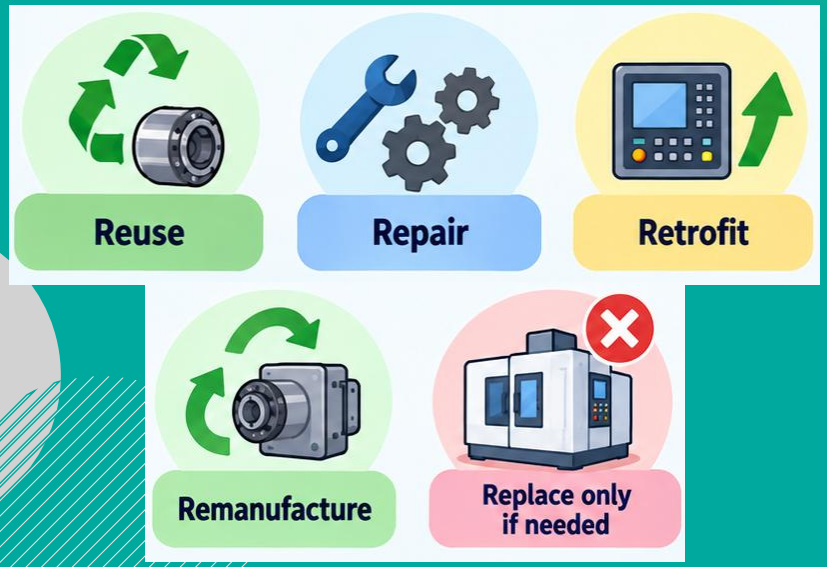
This project has received funding from the European Union's "Horizon Europe" programme under grant agreement 101092295

ReCLAIM Challenge

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- How much useful life remains?
- Which components really need intervention?
- Which circular strategy creates more value than replacement?

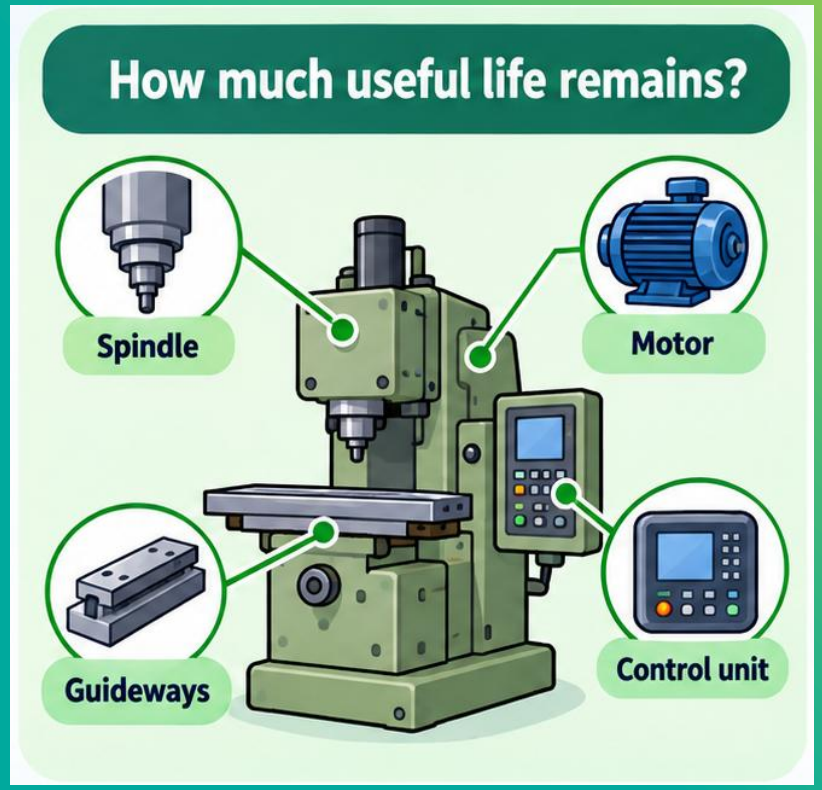




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ReCLAIM Solution

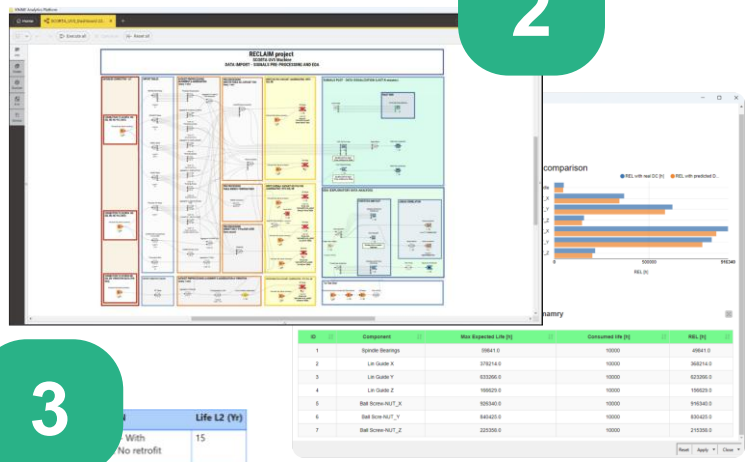
AIRSTRAT
AI-powered R-STRAT prediction service



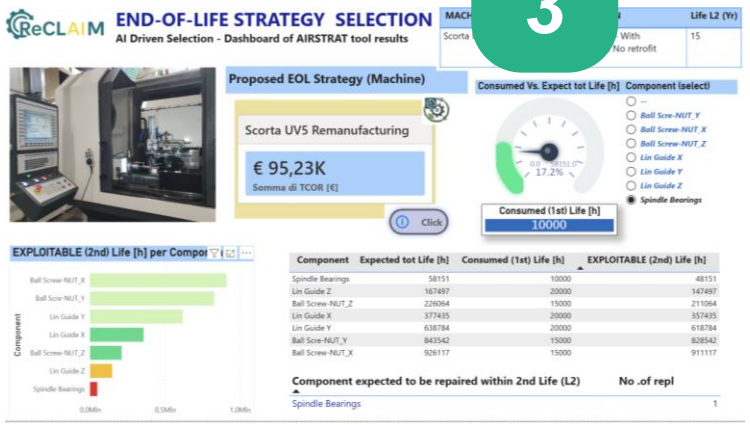
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ReCLAIM Results

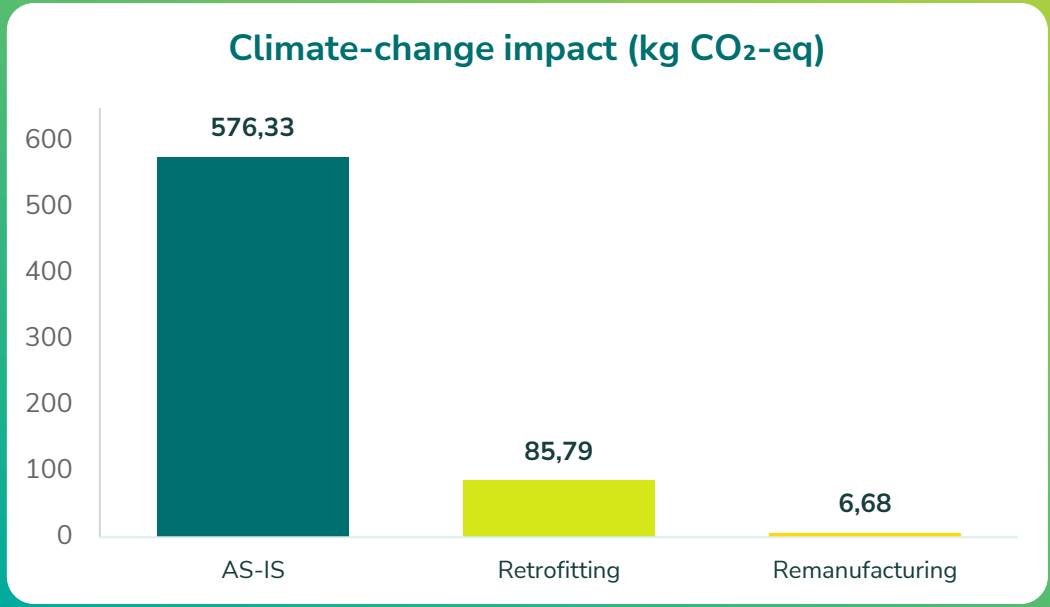
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93% Prediction accuracy

113–187% Extension of operative life

58% Total Cost of Reuse



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ReCLAIM Business potential and Scalability

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From Technology Demonstrator to Scalable Industrial Service

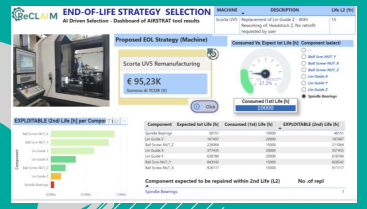
One validated platform. Three industrial service pathways

AIRSTRAT
AI-powered R-STRAT prediction service

Industrial end-users

Pay-per-Analysis

Lifecycle assessments support reuse, retrofit and replacement decisions.



Machine-tool OEMs

Integrated Lifecycle Services

AIRSTRAT extends after-sales, retrofit and certified second-life services.



Remanufacturing SMEs

Intervention Support

Identify technically feasible and economically attractive interventions.



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ReCLAIM Takeaway

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Before replacing an industrial machine, understand what value is still inside it

ReCLAIM turns remaining machine life into measurable economic and environmental value
It makes circular manufacturing an engineering and business decision

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