GIVING **NEW LIFE** TO **INDUSTRIAL MACHINES**

RECLAIM
Refurbishment and re-manufacturing of large industrial equipment

Technical standardisation means defining *"how to do things right"* to help improve the efficiency and effectiveness of the socio-economic system and achieve the UN 2030 goals.
Technical standards are tools to support innovation, business competitiveness, environmental protection and social responsibility with a view to sustainability.

How to read a standard

Italian standard (UNI) — European standard (EN) — Part — Year of publication

UNI EN ISO 22975-3:2015

International standard (ISO) — Number assigned to the standard

Standards help to...

CODIFY new terminologies and metrics, methodologies, processes, competencies and business models, ensuring certain performance, safety, quality, respect for the environment and social responsibility in global markets.
DEVELOP new products, services and organisational models and improve existing ones because they are a knowledge transfer tool for the innovation ecosystem.
TRANSFER R&I results to markets and society, making innovation accessible, safe, quality and interoperable.
PROMOTE the growth and international competitiveness of a country.
DIFFUSE TRUST in consumers and citizens by ensuring transparency and democracy in the regulatory process.
FEED an open, social and responsible innovation ecosystem with a process of co-creation of a recognised, transparent, consensual, democratic and bottom-up reference.

Who draft the standards?

In Italy it is **UNI - Ente italiano di normazione** (recognised by EU Reg. 1025/2012 and Italian D.L. 223/2017) with **1.100 Technical Bodies** - commissions, sub-commissions and working groups - with over 6,000 experts, who study, elaborate and publish voluntary application documents (technical standards, specifications and technical reports, "prassi di riferimento UNI/PdR") in all industrial sectors.
UNI participates in the work of the technical bodies of the international organizations **CEN** (European Committee for Standardization) and **ISO** (International Organization for Standardization), with a leading role in those that draft standards for strategic sectors for Made in Italy.

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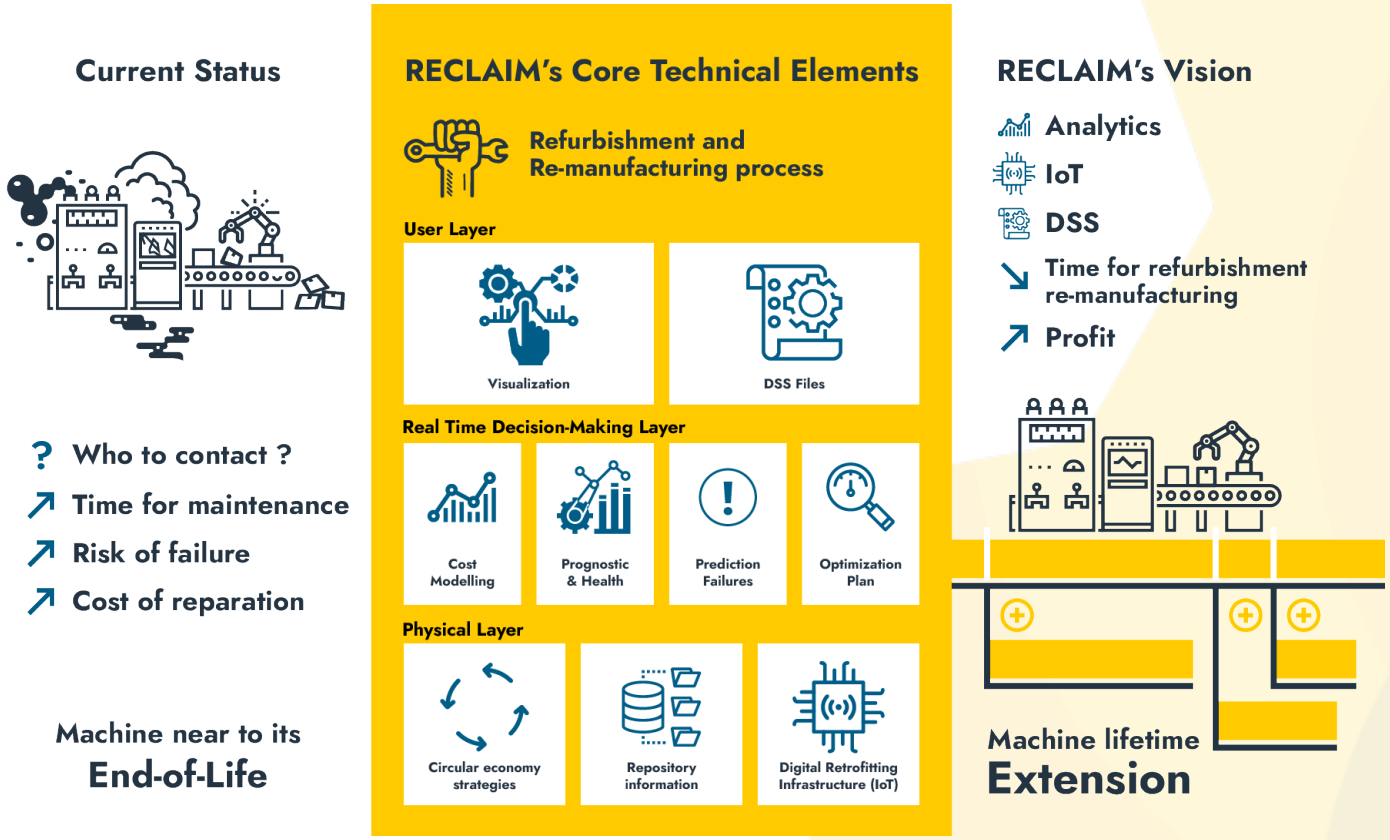
ENTE ITALIANO DI NORMAZIONE

RECLAIM - RE-manufaCturing and Refurbishment LArge Industrial equipMent

With over 32 million people employed and 16% of EU GDP, industry is the main driver of innovation and growth on our continent. Every year, the obsolescence of machinery causes losses in value and productivity to companies and workers.
RECLAIM intends to solve this problem with innovative and circular solutions through the **re-manufacturing** of large industrial machinery.

RECLAIM: vision and methodology



The project will provide solutions to cope with productivity slowdowns and protect the competitiveness of European companies. **Re-manufacturing**, as well as machinery refurbishment, also has an important economic potential as an industrial sector in its own right: it generates a turnover of around €30 billion and provides employment for 190,000 people.
Recent market surveys show that with adequate support from public authorities, the supply chain could reach 90 billion in turnover and generate 600,000 jobs by 2030.

The RECLAIM project is an important opportunity to strengthen the European industry and lead to a new mental approach based on the circular economy. European companies will benefit from this new approach to maintain and increase efficiency and remain competitive in global markets.

Project objectives

#CIRCULARECONOMY Promoting new digital technologies for reusing large industrial machinery, recombining obsolete components and implement predictive maintenance in a logic of circular economy.

#LIFETIME EXTENSION Extend the life cycle of machinery and improve productivity.

#STRATEGIES Define a decision making process for remanufacturing and refurbishment of large industrial machinery in 5 European industrial pilot cases.

RECLAIM

Partners: 22 companies, research centres, universities and technical standardisation bodies from over 10 EU countries and outside the EU!

Pilot cases and expected results

FRICTION WELDERS

- 50% accidents related to machine malfunction

- 50% maintenance costs

+ 8 years in the useful life of the machinery thanks to improved adaptability and reliability: greater operating efficiency due to predictive maintenance characteristics.

TEXTILE and **FOOTWEAR INDUSTRY**

- 50% production costs

- 40% accidents at work and environmental damage

+ 10 years machine life and greater operating efficiency.

WOOD INDUSTRY

+ 50% operating efficiency of the machines

+ 50% safety in the workplace

Increased life time of machinery

Lower repair costs

Reduction of waste material.

Check other case studies and projections made by the project partners:
https://www.reclaim-project.eu/demonstration-cases/

Standards + Innovation

To find out more about how standards can contribute to your R&I project: **https://www.standardsplusinnovation.eu/**

The standards in RECLAIM serve to...

#KNOW the state of the art, for remanufacturing and refurbishment

#ANALYZE partners' and market needs

#CODIFY metrics, products, processes and strategies for future circular economy standardisation activities for large machinery

#PROMOTE the acceptability, trust, interoperability of RECLAIM results in the markets.

Technical standardisation in the project will help to achieve sustainable development objectives
N° 9 "Business, innovation and infrastructure"
N° 12 "Responsible consumption and production".

RECLAIM can contribute to international (ISO) and European (CEN) standardisation by working in synergy with experts from technical bodies. The project results will innovate standardisation activities in the field of circular economy, remanufacturing and predictive maintenance by anticipating market needs.

Some of the most relevant technical committees for the European project **RECLAIM**

ISO	CEN
ISO/TC 108 "Mechanical vibration, shock and condition monitoring"	CEN/TC 231 "Mechanical vibration and shock"
	CEN/TC 319 "Maintenance"
ISO/TC 323 "Circular Economy"	
ISO/TC 199 "Safety of machinery"	CEN/TC 114 "Safety of machinery"
ISO/TC 299 "Robotics"	CEN/TC 310 "Advanced automation technologies and their applications"
ISO/TC 39/SC 4 "Woodworking machines"	CEN/TC 142 "Woodworking machines - Safety"
ISO/TC 72/SC 3 "Machinery for fabric manufacturing including preparatory machinery and accessories"	CEN/TC 214 "Textile machinery and accessories"

Some reference standards:

UNI EN 15341:2019 *Maintenance - Maintenance performance indicators (KPI)*
UNI EN 17007:2018 *Maintenance process and associated indicators*
UNI ISO 13381-1:2016 *Monitoring and diagnostics of machine condition - Prognostics - Part 1: General guidelines*
UNI EN ISO 14040:2006 *Environmental management - Life cycle assessment - Principles and framework*
UNI ISO 13379-1:2012 *Monitoring and diagnostics of the state of the machines - Interpretation techniques of the data and for diagnosis - Part 1: General guidelines*
UNI ISO 13374-2:2010 *Monitoring and diagnostics of machine status - Data processing, communication and presentation - Part 2: Data processing*

See the RECLAIM Standardisation Toolkit with the complete list of technical standards:
https://www.reclaim-project.eu/resources/

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https://www.uni.com/
https://www.iso.org/
https://www.cen.eu/
https://www.reclaim-project.eu/