ROB4GREEN

Robotics and AI as Enablers for Greener Dismantling, Remanufacturing and Recycling

www.rob4green-project.eu

SMART DISMANTLING AND RECYCLING OF WIND TURBINE BLADES

Giving composite waste a more sustainable second life



Pilot Case

acciona

www.acciona.com

Main challenges

- Large and variable end-of-life blades
- High time and energy demand during reprocessing
- Heterogeneous materials and challenging operations

ROB4GREEN pilot



- 3D scanning
- Material analysis
- Adaptive cutting plan
- Robotic cutting & segregation

ROB4GREEN Portfolio of enabling technologies

- Robotized Re-X processing skills
- Inspection and Monitoring Tools
- AI-based Planning & EoL Decision Making Agents
- Digital Assets for Traceability
- Human Augmentation Tools

Expected Impact

>50%	Cleaner material stream for recycling
-20%	Pretreatment energy use
-30%	Preprocessing/ segregation time

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AI-ENABLED HEAVY VEHICLE TYRES RETREADING

Extending tyre life through human-centred remanufacturing



Pilot Case

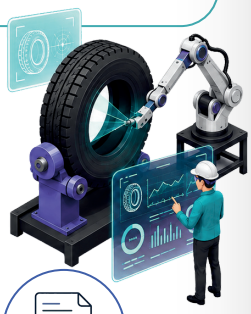
MICHELIN

www.michelin.com

Main challenges

- Reliance on operator skills, limited digitalization
- Increased physical & cognitive workload
- High variability of incoming tyres

ROB4GREEN pilot



- AI damage detection
- Repair assessment
- Robotic skiving & filling
- Validation & documentation

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Expected Impact

+15%	Tyres processed	-20%	Energy consumption	+15%	Material saving

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ROBOTIC RECOVERY OF AUTOMOTIVE ELECTRONICS

Unlocking circular value from electronic components



Pilot Case

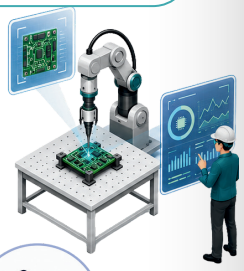
Valeo

www.valeo.com

Main challenges

- Manual, skill-intensive desoldering operations
- Limited traceability and inefficient cycle times
- High variability of PCB layouts and component types

ROB4GREEN pilot



- Load PCBAs
- AI component identification
- Automatic desoldering & parts extraction
- Sorting & traceability

Expected Impact

>90%	Component detection	>75%	Automatic disassembly	>75%	Operator time reduction

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