



JARVIS

DRIVING HUMAN-ROBOT COLLABORATION:

When collaborative robots step onto the microwave
dismantling line



Funded by
the European Union

This project has received funding from the European Union's Horizon Europe

EARTH — Electronic Appliance Recovery using Teams of Humans and Robots JARVIS OC1 Pilot | euroDAO × SUEZ | Deployment site: Feyzin, France

EARTH brings a collaborative robot directly onto SUEZ's WEEE treatment line in Feyzin, France, enabling true side-by-side human-robot collaboration — where humans provide judgment and adaptability to variability, while the robot handles the dangerous and physically strenuous tasks involving high-voltage capacitors and heavy transformers.

EARTH directly addresses JARVIS Challenge 3: Generative AI and Human-Robot Collaboration for Efficient and Scalable Remanufacturing.

Our technical architecture consists of four layers — perception, shared control, adaptive safety, and execution & feedback. The JARVIS Vision module (Object Recognition & Pose Estimation) provides valuable technical support to the perception layer. In real-world conditions where microwaves may be deformed or damaged, this support helps us effectively manage real-time localization and confidence assessment of key components such as transformers and high-voltage capacitors, establishing a solid foundation for the entire disassembly process.

During Sprint 2, we progressed from concept to real hardware. We optimized the vision model using actual data from the SUEZ site and containerized the perception module with Docker for easier replication across locations. We also developed and integrated three shared-control modes — fully autonomous execution, semi-autonomous collaboration, and human-guided with robot safety assistance — successfully closing the loop in the euroDAO lab. We are now advancing toward the TRL-6 integrated demonstration, with the next major milestone being on-site deployment at Feyzin.

JARVIS mentoring has been a significant accelerator throughout this sprint. The regular video syncs and roundtable discussions provided expert guidance on critical details including vision parameter tuning, force-limit configuration, and hardware selection, greatly reducing our trial-and-error time.

Joining the JARVIS ecosystem has given our small team access to three of the most valuable resources: high-quality technical support, European-level visibility, and cross-pilot operational experience.

The technical support from the JARVIS Vision module has allowed us to concentrate on euroDAO's core contributions — the shared-control logic and the adaptive safety layer. Knowledge exchange with other pilot teams has also helped us build collective expertise in perceiving unstructured objects, a shared challenge across the ecosystem.

Beyond technical acceleration, JARVIS has provided professional channels to increase the visibility of our work within the broader robotics and circular economy community.

Next stop: Feyzin on-site deployment

Real operators. Real industrial environment. TRL-7 validation.

👉 If you work in robotics, the circular economy, or WEEE treatment, we would love to connect.

[#HumanRobotCollaboration](#) [#CircularEconomy](#) [#WEEE](#) [#Robotics](#) [#JARVIS](#) [#HorizonEurope](#)