



Flexible remanufacturing using AI and advanced robotics for circular value chains in EU industry

EFFRA Manufacturing Partnership Days

08/05/2024

Christos Gkournelos



This project has received funding from the European Union's Horizon Europe Framework Programme under grant agreement n° 101138415.



**Funded by
the European Union**

Meet the Project



Flexible Remanufacturing using AI and advanced robotics for circular value chains in EU industry

RENÉE: French name, meaning born again or reborn

Funded under **Horizon Europe** work programme:

Call: *HORIZON-CL4-2023-TWIN-TRANSITION-01-04 — Factory-level and value chain approaches for remanufacturing (Made in Europe Partnership) (IA)*

GA: 101138415

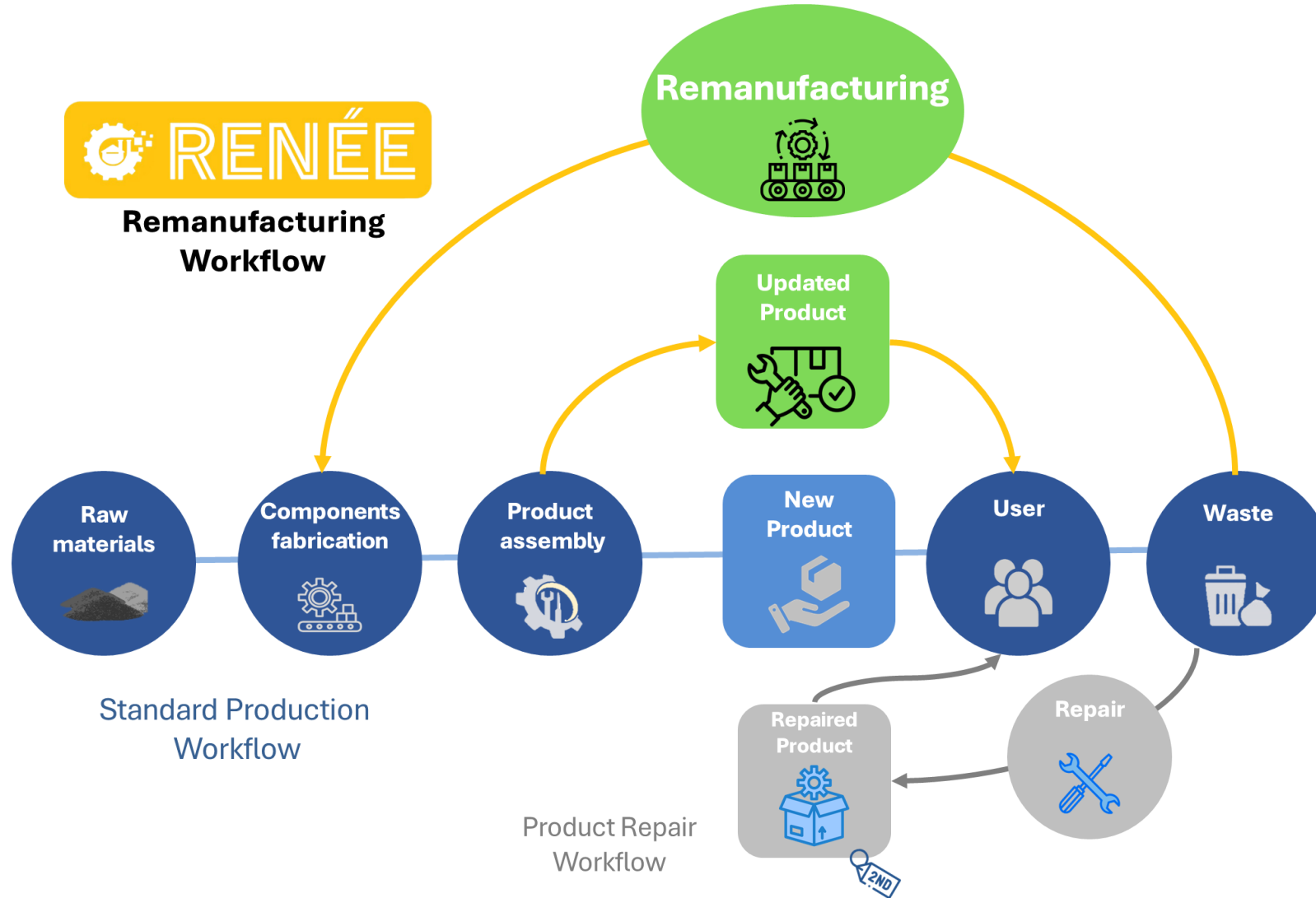
Start date: 1st Jan 2024

End date: 31st Dec 2027

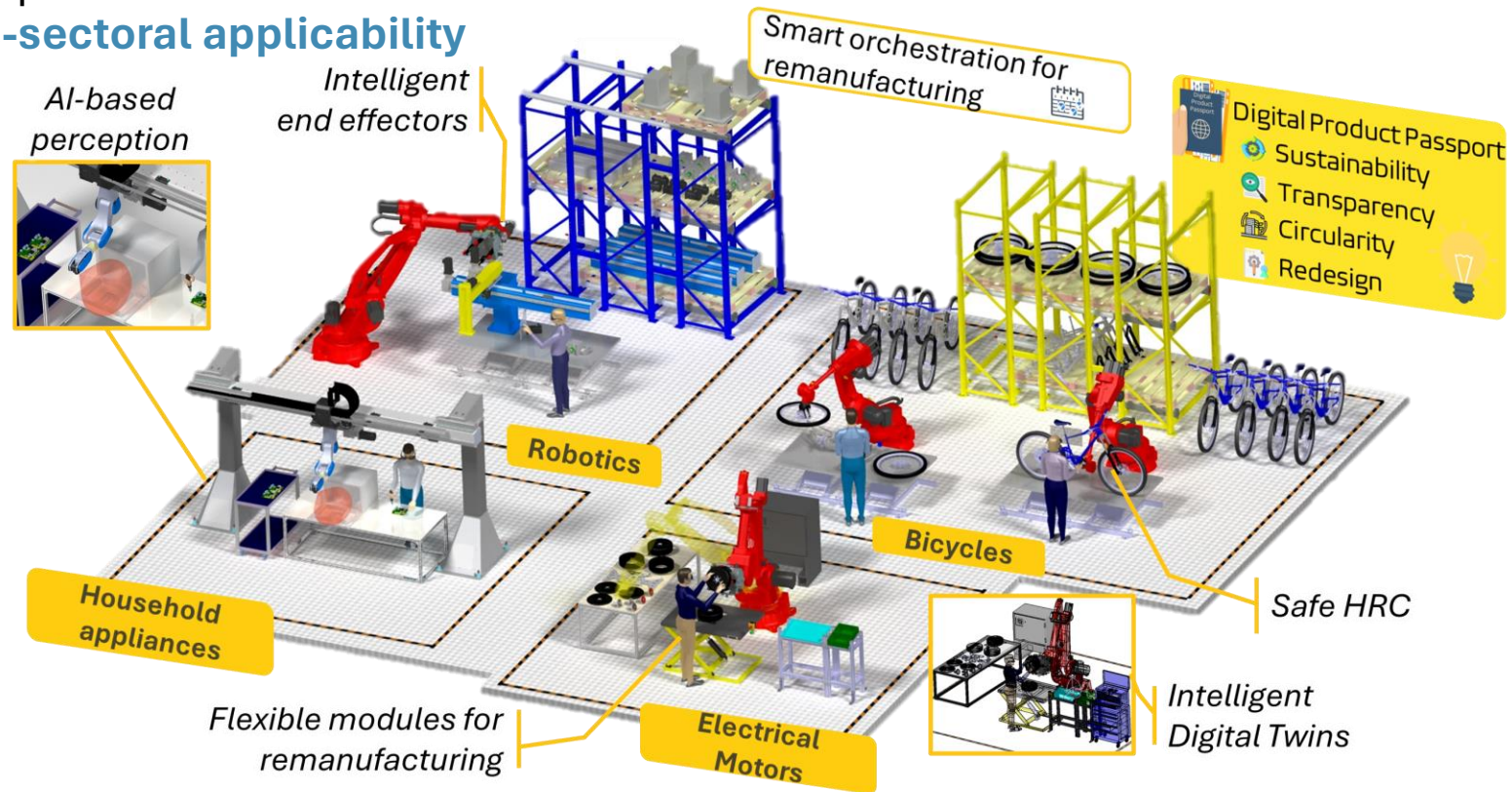
Duration: 48 months

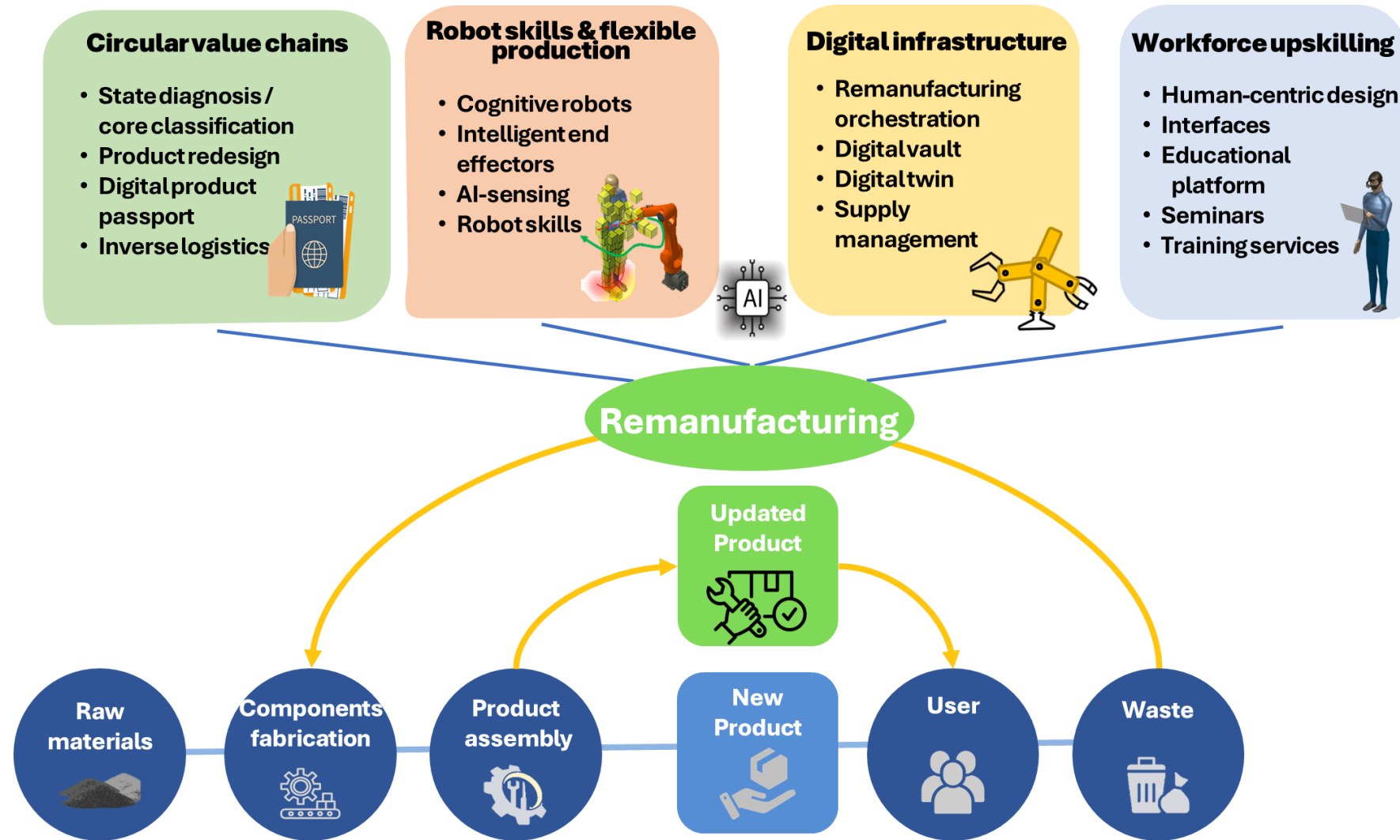


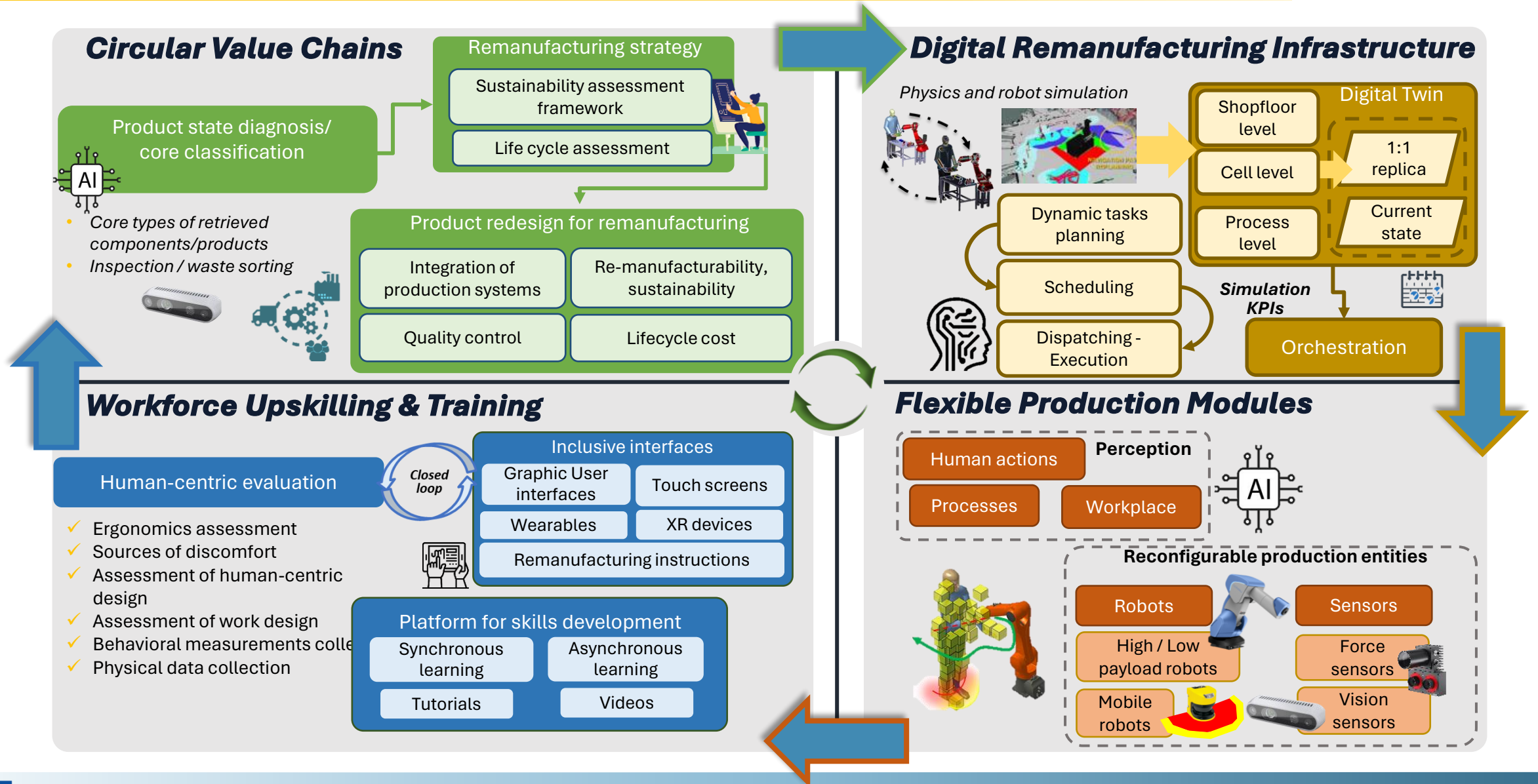
The Remanufacturing workflow



- **O1:** Achieve sustainable remanufacturing operations in the context of enabling **circular value chains with cross-sectoral applicability**
- **O2:** Maximize product and component reusability by **enabling traceability** of the remanufacturing routes
- **O3:** Enable **flexible processes** able to handle one-of-a-kind remanufacturing exploiting **hybrid production systems**
- **O4:** Strengthening of the **workforce capabilities** for remanufacturing
- **O5:** Demonstrating technically and financially viable **remanufacturing processes across multiple industrial sectors**







High

Level of Automation

Low

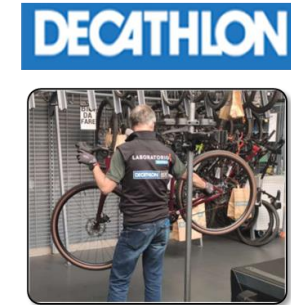
EV motors industry

Design the next generations of Electrical motors for remanufacturing and implement automation technologies for larger scale remanufacturing.



Mobility Industry

Implementing autonomous quality control systems supported by digital infrastructures



Robotics Industry

Deploying a robot-assisted solution for the manipulation and handling of the heavy robot component parts in an HRC production scheme



Household Appliances

Implementing HRC for Refrigerator remanufacturing, involving state diagnosis, classification, and disassembly-assembly.





Thank you for your attention!

Christos Gkournelos

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