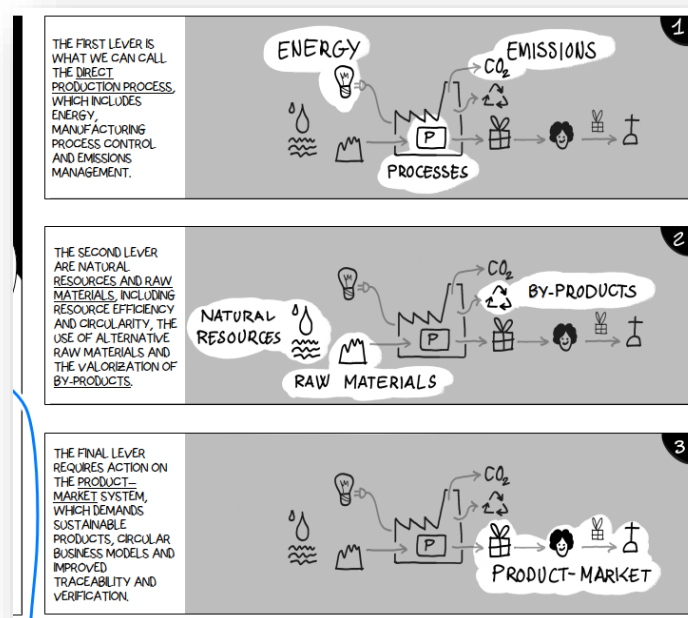


CARTIF develops advanced industrial digital technologies enabling adaptive, efficient and traceable low-carbon manufacturing. Our work focuses on the operational intelligence layer of industrial decarbonisation, helping energy-intensive industries optimize processes, integrate variable energy sources, improve flexibility, reduce raw material consumption and emissions and enable circular production models.

We provide industrial intelligence technologies already validated at relevant environment stage (TRL6) and ready to be demonstrated in industrial demonstrators targeting TRL7-8.

Our Industrial decarbonisation philosophy (3 levers)

- **Direct Production Process Lever:** AI-assisted production optimisation, adaptive control, predictive operation, process flexibility, process deviations detection and decision support systems impacts on energy, manufacturing process and emissions.
- **Raw Materials and Resources Lever:** with Digital modelling technologies and operational intelligence to monitor resource efficiency.
- **Product–Market Lever:** Technologies for DPP traceability, digital tagging and sustainability data integration, impact on sustainable products demand, new circular business models and seamless traceability and verification.



* excerpt from blog post: <https://blog.cartif.es/en/digitalization-applied-decarbonization-processes/>

Key capabilities

TRL6 digital technologies ready to be integrated into industrial decarbonisation demonstrators. We provide the operational intelligence layer that helps industrial demonstrators run flexibly, efficiently and with measurable low-carbon impact.

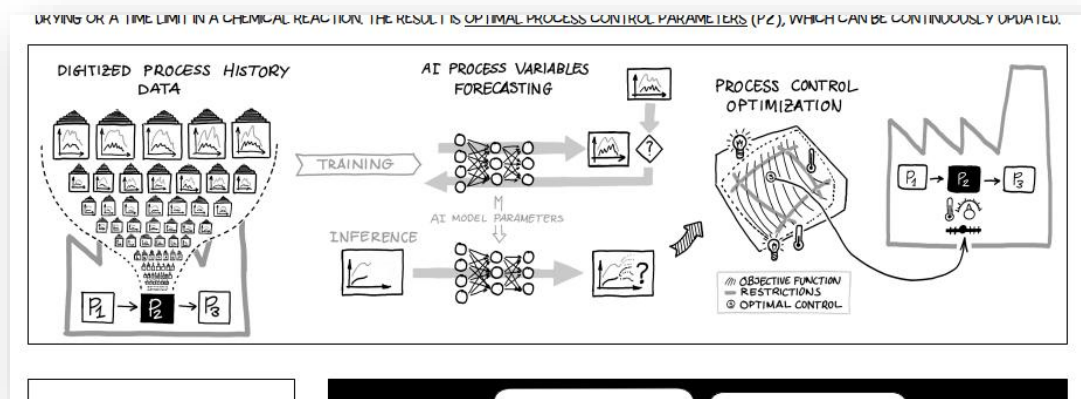
OUR KEY CAPABILITIES

TRL6 industrial digital technologies for operational decarbonization.



Example TRL6 technology

With the help of artificial intelligence, we can predict key process variables from process historical data and then optimize the control of the process and, for example, minimize energy consumption while respecting production target quality and other constraints, such as a maximum temperature in a drying process or a time limit in a chemical reaction. The result are a set of optimal process control parameters, which can be continuously updated in real time.



* excerpt from blog post: <https://blog.cartif.es/en/digitalization-applied-decarbonization-processes/>

Relevant supporting European projects

- **s-X-AIPI (Coordinator):** Advanced industrial automation and AI-driven operational intelligence for process industries. Grant no: 101058715. <https://s-x-aiipi-project.eu/>

- **CAPRI (Coordinator):** Industrial operational intelligence and adaptive orchestration technologies for advanced process industries. Grant no: 870062. <https://cordis.europa.eu/article/id/451072-transforming-the-process-industry-with-four-levels-of-automation>
- **biOSpaCE (Partner):** Industrial digital tagging technologies for traceability and DPP integration in circular bio-based value chains. Grant no: 101182453. <https://biospace.com/>
- **ORGANIC (Partner):** Adaptive AI-driven control concepts for bio-intelligent additive manufacturing. Grant no: 101178127. <https://www.organic-project.eu/>

We are looking for joining industry lead demonstrators

We are interested in collaborating with:

- Energy-intensive industries
- Industrial pilot owners
- Steel and metallurgy industries
- Circular manufacturing ecosystems
- Industrial technology providers
- Industrial digitalization integrators

Especially in demonstrators related to:

- Flexible low-carbon manufacturing,
- AI-assisted industrial operation,
- Circular production systems,
- Industrial flexibility,
- Adaptive process control,
- DPP-enabled industrial traceability.

Contacts

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