Flex4Res

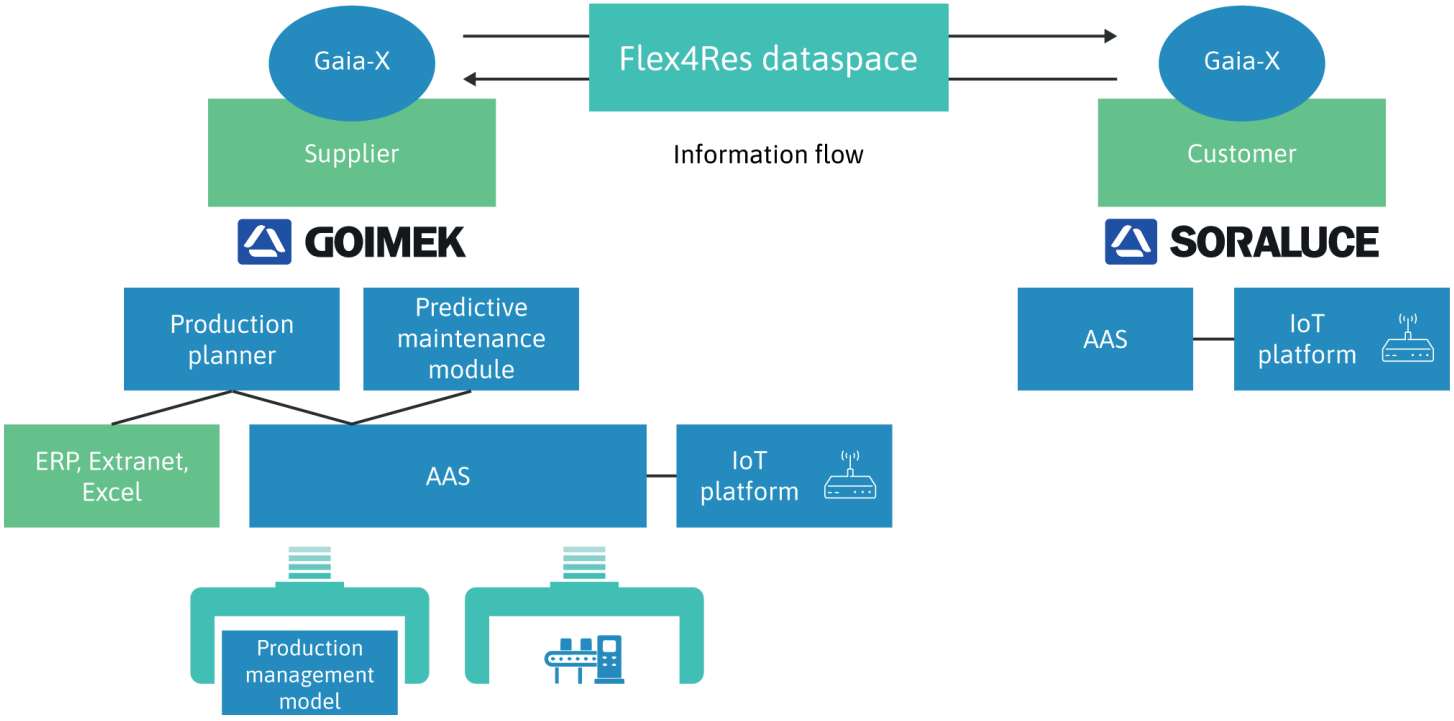
Data spaces for flexible production lines and supply chains

Use case with GOIMEK
Production planning optimisation

The challenge

All operations are performed in several working centres. The process steps are flexible but need to be fixed according to the daily production needs. Based on data from the ERP system a master production plan is generated, which is manually turned into a final production plan. Combined with a lack of flexibility these manual tasks cause inefficiencies, which reduces competitiveness and lowers production predictability.

The vision of the future process



The production planner utilises real-time data from various sources to optimise the scheduling at the plant level, proposing reconfiguration strategies and alternative schedules if deadlines are at risk.

In addition, the predictive maintenance module will identify anomalies that could lead to failure. Since this will also impact production planning, actions will be suggested to enable a fast reconfiguration of the production to avoid unexpected problems. Moreover, secure data exchange based on the Gaia-X concept will be deployed to facilitate the communication between client and provider, using digital twins and the Asset Administration Shell (AAS).

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Co-funded by the European Union

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About GOIMEK

GOIMEK is a cooperative member company of the Danobat group. They are specialised in precision and large machining and their services span the entire supply chain: purchasing raw materials, machining processes, thermal/surface treatment, painting, verification and certification of the machined parts.

With a wealth of expertise in advanced machining processes for critical components in demanding industries, GOIMEK ensures strict adherence to the necessary quality standards.

Their facilities feature precision and high-output machines designed for cutting-edge machining processes. The combination of advanced production resources and skilled professionals ensures that work is executed to the highest standards.

About Flex4Res

Flex4Res aims to provide an open platform to support production network reconfiguration for resilient manufacturing value chains. In four industrial pilot projects, the project team will test and validate the integrated solutions on the reconfiguration of different hierarchical levels from the value chain to machines and devices.

The research project was launched on 1 January 2023, runs for three years and is led by the Laboratory for Manufacturing Systems & Automation. The funding framework is provided by the European Health and Digital Executive Agency (HaDEA) as part of the European Union's Horizon Europe research and innovation programme.

EXOSCALE member of A³ Digital · Beia Consult International · CONTACT Software · EIT Manufacturing Co-funded by the European Union

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LMS Laboratory for Manufacturing Systems & Automation · MONDRAGON · netcompany intrasoft · PTW TU Darmstadt Institut für Produktionsmanagement, Technologie und Werkzeugmaschinen

SAVVY · SIDENOR · SORALUCE · Universität Siegen · voestalpine ONE STEP AHEAD.

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This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101091903.