# Overview of thematic working groups

The simple and secure exchange of machine data between production companies along the supply chain enables a quick response to changing conditions and needs. The Austrian-Ger-man Gaia-X lighthouse project EuProGigant (the "European Production Giganet"), demonstrates within the framework of four thematic working groups how a secure and sovereign data exchange can be implemented using Gaia-X. Furthermore, it stands for new, data-driven business models.

Component matching

When mounting assembly groups in mechanical engi-neering, the assembly components have to be manually matched for accuracy of fi t due to diff erent manu-facturing environments and methods. Manufacturers often compensate for the deviations in focus by using specially manufactured components. This is where the working group comes in and plans an automated adjustment of the individual parts, taking tolerance deviations into account. In the process, information from diff erent data sources is brought together, which enables an optimised assembly of the components. This results in added value, which is refl ected in the reduction of the time required for manual assembly and in a reduction of rejects.

Machine + Product
User A

Machine + Product
User B

gaia-x

Assembly
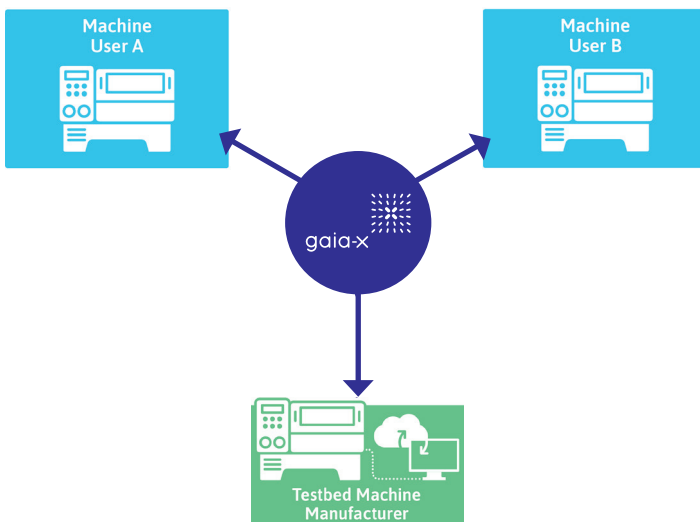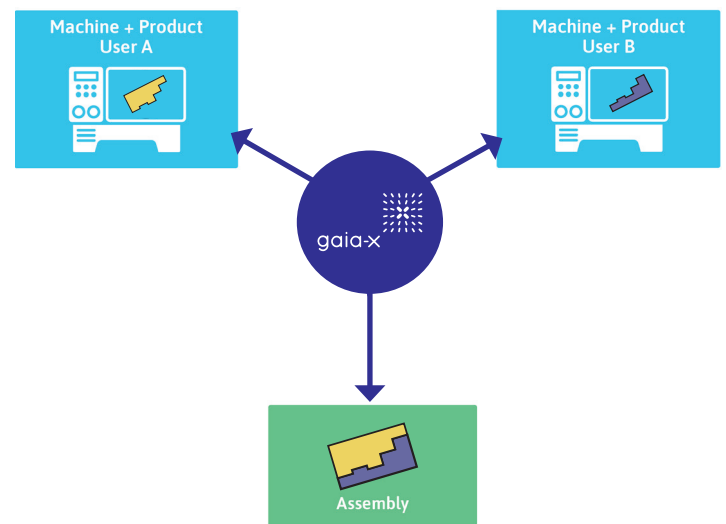
Validation platform

Sharing operating data across the entire value network and company boundaries enables more reliable and longer use of production facilities. The aggregation and evaluation of this data is often carried out using artifi cial intelligence and machine learning. However, large amounts of data are needed to make valid statements. Small and medium-sized companies often lack the necessary number of identical machines to generate suffi cient operating data, or they are unable to evaluate the existing data volumes. The wor-king group is investigating ways of solving the problem of how players can cooperate across company boundaries to create such a database. The validation platform developed in the process supplements the data with standardised measured values from certifi ed test systems. To ensure that data is exchanged securely, anonymously, and sovereignly, the validation platform is based on the principles of Gaia-X.

Machine
User A

Machine
User B

gaia-x

Testbed Machine
Manufacturer

EuProGigant is a EU-wide registered trademark in word and image of TU Wien and TU Darmstadt.

www.euprogigant.com

Contact: info@euprogigant.com
Press: media@euprogigant.com

Mobile processing machines

This working group is dedicated to the challenge when the work piece does not come to the machine, but vice versa. The associated use case focuses on how large amounts of data can be processed during the maintenance of railway tracks and further used for autonomous planning. It is representative of the mobile use of machines, where unreliable networks and poor transmission options currently make data exchange difficult. Using a measurement vehicle, the working group demonstrates how the data collected on the machine can be made available to external partners. Gaia-X enables targeted rights and access management.

Cloud

gaia-X
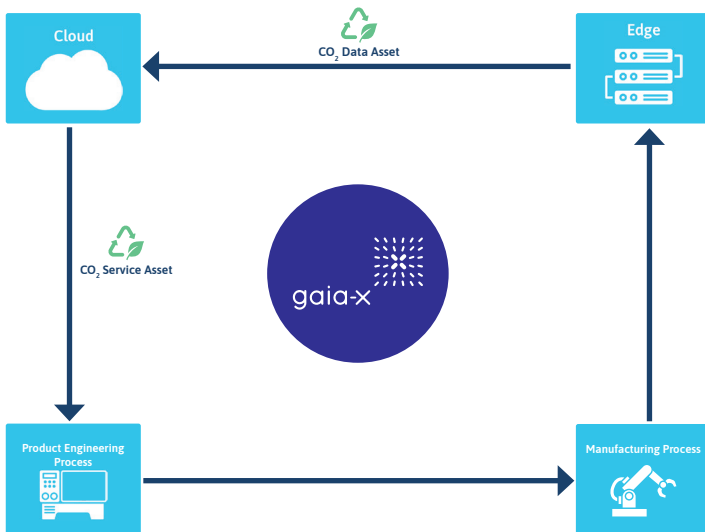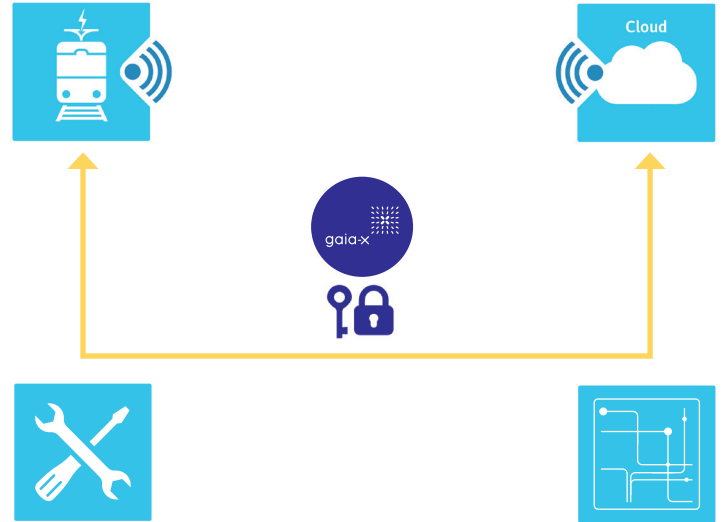
CO_2 footprint in production engineering and manufacturing

The European Green Deal focuses on complete climate neutrality by 2050. As a result, the CO_2 footprint of products is gaining in importance and becoming a competitive advantage. The working group is focusing on solutions, how companies can already infl uence the carbon footprint of their products in their design phase. In doing so, the team develops ways on how relevant CO_2 and energy data around material selection and manufacturing processes can be recorded, made avai-lable, and used. Gaia-X as a federated data infrastruc-ture ensures a secured and transparent data exchange.

Cloud
CO_2 Data Asset
Edge
CO_2 Service Asset
gaia-X
Product Engineering Process
Manufacturing Process

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