# Industry 4.0: Project Halfback

Strength and Reactivity for manufacturing SMEs

The main goal of the HALFBACK project is to assure highly available manufacturing processes, by:

- Forecasting failures of machines, tools, product quality loss, resource flow problems, etc.

- Scheduling maintenance, component replacing, process re-planning, and even take over the production by another factory, in an optimized and intelligent way
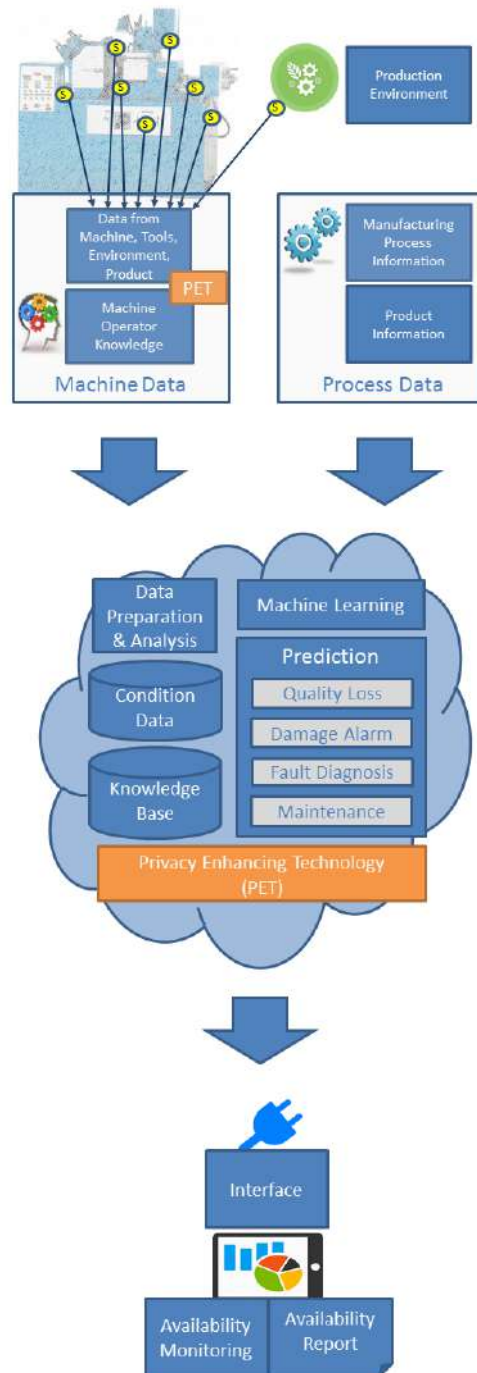
Data will be gathered using sensors located on the machines and tools. **Additional information** will be collected from the manufacturing environment, the product itself as well as the machine operator's experience.

Big data algorithms will use the collected data to understand the process and to learn from the experience of the operators.

Semantic technologies will be used to predict machine damage, quality loss or maintenance demands in the future.

Virtual profiles of the machines (footprints) can be aggregated in the cloud and registered at the "**High Availability Machine Broker**". Registering the machine footprint, the machine location, the machine availability, among other useful data to the broker, allows it to offer the machine as a service to other companies.

This will allow companies to mitigate the expected machine failure by using a "High Availability Machine Broker" to search for an adequate machine replacement and **shift production to another factory** to guarantee high availability.

The HALFBACK project will contribute to the improvement of the competitiveness of manufacturing SMEs along the river Rhine by their networking with this innovative approach to manufacturing as a service.

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