Do you wonder where added value from Industrie 4.0, i.e. interconnectivity and intelligence, is concretely for your company? Or are you seeking a technology-neutral implementation partner for your Industrie 4.0 project in the chemicals, refining, pharmaceuticals, power or food industry?

We are a technology partner that provides Industrie 4.0 expertise and solutions for your process manufacturing systems, regardless of whether the processes are batch or continuous. We additionally provide consulting when you are developing new business models.

– maintenance and compliance assistance systems,
– soft sensor data analyses and black-box modeling,
– predictive maintenance algorithm development,
– load forecasts to prevent peak loads,
– virtual reality (VR) training scenarios for system operation and reliability and maintenance,
– smart supply chain systems for manufacturing, e.g. shipping unit tracking and tracing, and
– innovative VR facility information systems.

**Industrie 4.0 during Operation**

Interconnectivity and intelligence also add value to existing systems. We enable you to operate your current manufacturing systems more efficiently, flexibly and reliably with our products and services:

**Industrie 4.0 during Planning**

The basis of your system’s digital twin is optimally integrated digital engineering.
We can help you here, for instance, by:

- developing suitable interfaces between different existing planning tools,
- developing new tools for integrated digital engineering, e.g. augmenting 3D system objects in real images,
- integrating laser scan data in your planning, and
- integrating planning documents in maintenance assistance systems.

We can also use our interactive VR environment to boost authorities or residents’ acceptance of a planned facility.

---

**Industrie 4.0 at Construction Sites or during Scheduled Downtimes**

Inefficient delays are a significant cost driver at facility construction sites and during downtimes. The use of information and communications technologies at construction sites helps leverage potential savings. To this end, the following technologies are recommended:

- tracking and tracing of material and relevant staff,
- real-time monitoring of facility construction operations and virtual construction progress in a 3D facility model,
- supplier and contractor portals for partners at a construction site, and
- digital site plans for construction site planning and execution, also as part of a facility information system.

We will help you select, design and use these technologies at your construction site or during system downtimes.

---

**More Efficient and Transparent Processes and New Business Models**

Interconnecting system components generates additional potential profits for your company. Processes become transparent, relevant information can be communicated in real time, and decisions can be made faster. Elements of autonomous control and new business models manifested in improved interfaces to business partners help run your company with more agility.

Assessing new business models from your partner companies to integrate them in your operations is just as important. We will help you assess relevant capabilities, design new business models and subsequently implement them technically.

---

**Take Advantage of Our Interdisciplinary Expertise**

Implementing Industrie 4.0 is an interdisciplinary undertaking. The Fraunhofer IFF embodies this like none other through its know-how in the fields of automation, information and communications technologies, data analysis, work organization and, above all, process and plant engineering. We speak your language and understand your problems. Contact us if you want to get your company fit for Industrie 4.0.

---

3 Digital engineering.  
4 Digital construction site.  

*Photos: 1, 3, 4 Dirk Mahler, Fraunhofer IFF; 2 Fraunhofer IFF*