

## Trend: Digitalisation and Industry 4.0

# Material flow for the Smart Factory

In "smart" production and intralogistics concepts, software and identification systems can be crucial to success. Manufacturers of such systems are currently profiting from this trend. At the same time, however, they are faced with the challenge – like their customers – of becoming a provider of smart solutions.



**P**roduction which is highly automated and at the same time highly flexible in batch size 1: this is the basic principle of Industry 4.0 in very simple terms. Many companies have started moving towards this goal and are currently redesigning their internal material flow to suit. This is no mean feat since the entire logistics chain must be adapted to new production processes. One example: at its plant in Stuttgart, Porsche has completely eliminated rigid line production for its electric

Taycan model. Instead of chain drives and overhead conveyors, flexible AGV are now being used to move the semi-assembled vehicles all around the factory. The parts required for assembly are also brought to the corresponding assembly islands by (smaller) AGV.

This principle opens up a whole new level of freedom for (serial) production in "smart" factories. Not only the rate of production can be varied, but also its sequence, leading for example to "swarm

manufacturing". In addition, other models can easily be integrated later without having to invest in new hardware for production plants.

But such a production concept can only be truly smart, flexible and efficient if the information flow is adapted to suit the altered material flow. This is a challenge currently facing providers of software, identification systems and sensors.

### **Trend: integrated communication**

This in turn requires a system which is adapted to suit the new requirements of Industry 4.0 in production, automation and intralogistics. This can best be solved by bringing new topologies into play. For this reason we have developed 'nexy', a wireless communication network for the acquisition, transmission and management of sensor data within the Internet of Things (IoT). The focus here is on the energy-efficient wireless transmission and evaluation of sensor data. Typical applications are AGV fleets and mobile eKanban systems.

### **From a manufacturer of hardware to a provider of solutions to...**

We have thus developed from being a manufacturer *of* sensors to a provider of solutions *with* sensors, realising the communication between e.g. sensors at field level and our customers' IT systems. For us as a company, this step has been and still is accompanied by a radical transformation process, both internally and regarding our cooperation with partners and customers – a trend which



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will also be familiar to other companies in the same market. And the development does not stop there. We are currently taking the next step and opening up our nexy platform for other wireless technologies and hardware components. For example, sensors from third-party manufacturers can be fitted with a wireless module facilitating integration within the network, considerably expanding its possibilities.

This brief summary of our current company and product development shows that the trend towards digitalisation, Industry 4.0 and Smart Factory is not only affecting manufacturers of goods, i.e. the customers of material flow technology, but also the manufacturers and developers of hardware, software and identification systems. They are driving the digitalisation of their customers forward by providing them with more flexible, more intelligent communication systems. And this can mean that they themselves transform, for example from a manufacturer of sensors to a provider of solutions and/or platforms.

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