Industry 4.0 and 101
connected production
**Industry 4.0 and IoT**

**Intelligent manufacturing**

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**Intelligent production**

The smart combination of sensors, the continuous analysis of the acquired data and automated control based on the learned data.

Together with your employees' expertise the systems learn how to react quickly and directly to any eventualities in your production and suggest the ideal line for production for you.

We support you with the analysis, networking and controlling using CEP and ERP.

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**Locate objects in real-time**

If you let machinery and objects communicate with each other digitally using standardised protocols and a digital image of your production all the elements involved in production can inform each other.

Each production unit knows exactly when the material is ready or which production step follows next.

Locate objects like transport containers, production batches or means of transport across your entire production.

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**The smart factory learns too**

The asset of any enterprise is its employees' experience.

Intelligent systems learn too from your specialists, learn patterns of behaviour and can therefore react faster and more targeted than with a conventional TARGET / ACTUAL comparison.

We are shifting the quality checks previously carried out at the end of the production process into the actual production process and therefore receive this information sooner than before.
state-of-the-art technologies
We combine state-of-the-art technologies with existing structures.

Condition monitoring
Seamless monitoring through to predictive maintenance, you will be surprised how well your machines know themselves.

Detect the threat of machine failure early and prevent unnecessary and expensive downtime.

Our systems' smart predictive models save money thanks to targeted maintenance. Get information about your production units' state of health through different communication channels and react in good time.

Real-time data analysis
Our systems receive data from the plants' sensors in real-time and analyse them in real-time.

Thanks to the use of in-memory processing, sensor data is analysed and processed in real-time. As a result of this you have real-time mapping of your production at any time and can access key figures any time and anywhere.

User notifications
Communicate with the systems and be informed according to your own requirements.

Regardless of where you are and what you're doing.

Whether you're a production manager or machine operator: our systems always keep you up-to-date.

This enables efficient controlling, targeted production planning and the best possible support for different machines.

In future you will always know what is going on in your company at any time.
The Smart Factory Platform

Our innovative software is an integrated solution from the sensor to application.

**Machines & Devices**
- Sensor- and Production Data Acquisition
- Robots
- Transporter
- Warehouse
- Staff
- Lasers
- Machines
- Transport container
- Devices & Wearables

**Smart Factory Platform**
- Vision MES
- Process Engine
  - Rule Engine
  - In-Memory Event Processing
  - Machine Learning
  - Data Storage
- blueCEP

**Business Applications**
- Business Systems
  - SAP
  - Microsoft Dynamics
  - Oracle
- Dashboards
- System Services
- Business Intelligence
- Cloud Services
- Maintenance Services

**in the factory**
Our sensor systems collect various values, for example vibration, position, weight and much more from different plants, equipment, locations and transporters.

In addition to the data from the production plants, a digital map of production is sent to the smart factory platform without interruption.

We have even developed special adapters for older plants to make them smart. Thanks to the use of familiar protocols and extensible interfaces there is even nothing to stand in the way of integrating customised solutions.

A modern real-time location system ensures that objects and even people can be located within the factory. It is even possible to notify people using this.

**the platform**
At the heart of the Smart Factory platform is blueCEP. Thanks to the use of state-of-the-art CEP and in-memory technologies all the incoming data is processed in real-time.

Together with the historical data from data storage the integrated machine learning can instantly calculate predictions, modifications and patterns. The rule engine carries out actions based on this, e.g. by requesting maintenance or sending an alarm to an employee.

As a result, blueCEP can in turn independently control actuators in the factory.

In order to consider the resources, production process and work processes for these actions the process engine ensures that the allocated actions go to the right recipient. For this the system also uses production data from the Vision MES.

**lots of applications**
The Smart Factory platform offers its services via a standardised interface for other systems. This allows, for example, for production orders to be sent directly from an ERP system to the platform. We deliberately use open and flexible interfaces so that it is not just existing but also future systems that can be connected.

The Smart Factory platform also includes various software connectors in different programming languages. Using these you can easily connect your own sensor to the platform on the one hand.

On the other hand the integration of real-time data or querying historical data is also possible without any problems.
Smart Factory ready

THE SMART FACTORY

Whilst Vision’s laser and production systems already meet all the requirements of smart CPPE, we offer this intelligence of the future for old machinery or plants by other manufacturers too.

Only the integrated networking of all units involved in the production process allows for the required increase in efficiency and thereby higher output and lower production costs.

Vision’s smart systems and optional connectors to, e.g. SAP Business One, SAPR/3 or SAP S4/HANA make your production transparent, controllable and monitorable.

The centralised control system’s intelligent algorithms show you the sought-after ideal line for production and controls according to this, if required.

INDUSTRIE 4.0 MADE IN GERMANY

We see Industrie 4.0 as the top “Made in Germany” product as the driving force behind the German industry.

And under this motto we are working worldwide with our partners on launching this industrial revolution.

Whilst the first and second industrial development was initially reserved for major production corporations, we have made it our job to also enable small and medium-sized enterprises to benefit from this innovative edge.