



Production logistics gets smart

Closing the circle

Sensor solutions in production logistics —
even for the smallest spaces in production

Production logistics

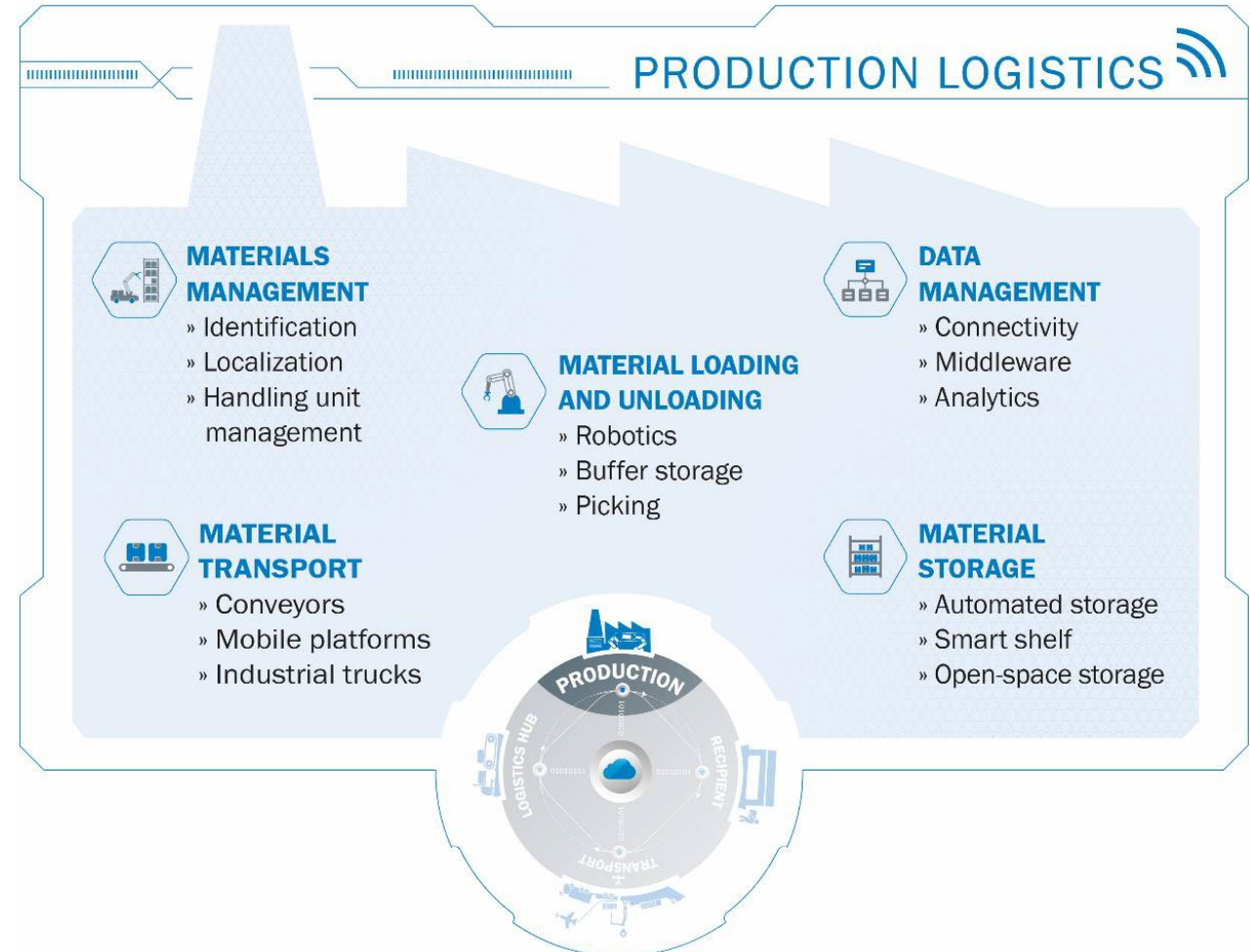
Closing the circle

Production and intralogistics in harmony.

Once considered two distinct disciplines, now these areas are growing closer and closer together thanks to advances in automation and digitalization.

Making the **material flow** completely transparent, from the materials being delivered to delivering the finished product, is the goal here. The prerequisite for **smart, networked production** is finally always being able to know where everything is.

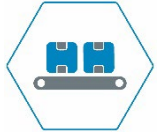
› [Further information](#)





Production Logistics gets smart

Video



Material transport

Conveyors, mobile platforms, industrial trucks

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Sensor Intelligence.



Everything on the right track

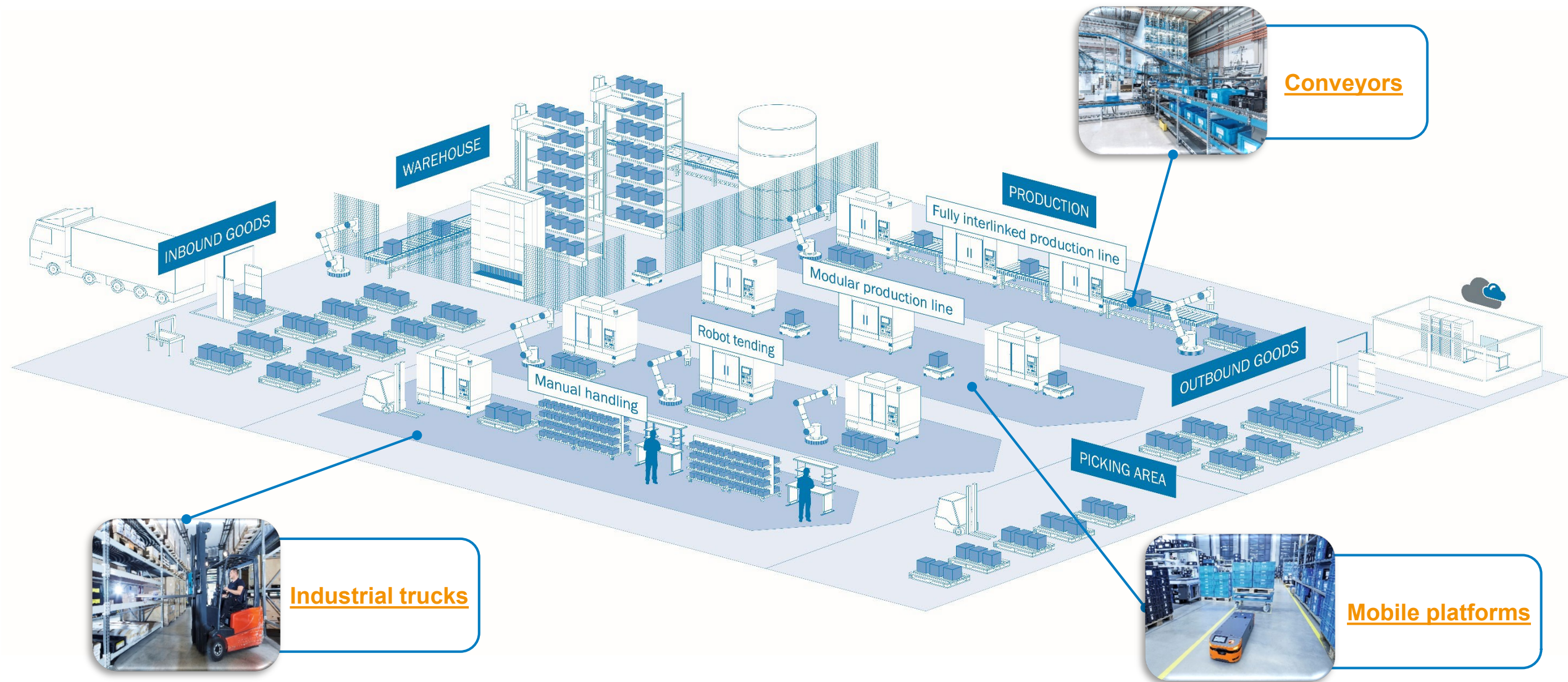
The conveying equipment used is instrumental. Be it mobile platforms, industrial trucks, tugger trains, or conveyor belts: supplying production with new components and returning empty containers becomes **highly efficient** and **flexible** with the help of these **transport technologies**.



Material transport

Conveyors, mobile platforms, industrial trucks

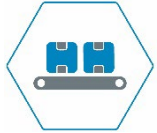
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Conveyors

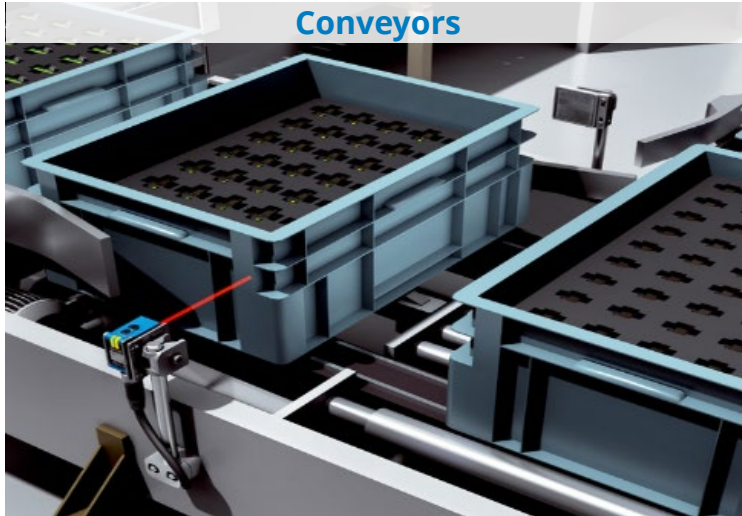
Industrial trucks

Mobile platforms

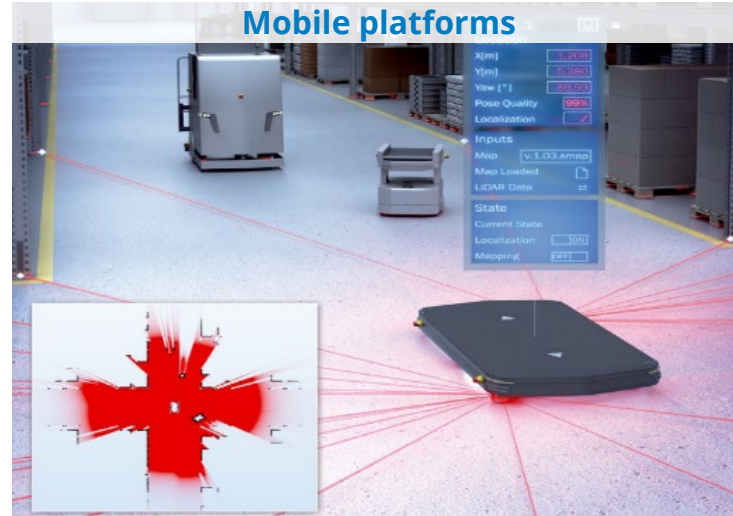


Material transport

Conveyors, mobile platforms, industrial trucks



- › Workpiece carrier
- › Belt conveyor
- › Overhead conveyor



- › Environmental perception and safety
- › Navigation and positioning
- › Load handling
- › AGV/AGC docking
- › Mobile robots



- › Truck applications
- › Assistance systems
- › Identification applications
- › Localization of trucks



Material storage

Automated storage, smart shelf, open-space storage

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Such great heights

Just-in-time production and lean production represent [modern storage concepts](#) that automatically ensure the replenishment of supplies and therefore actively support the production flow.

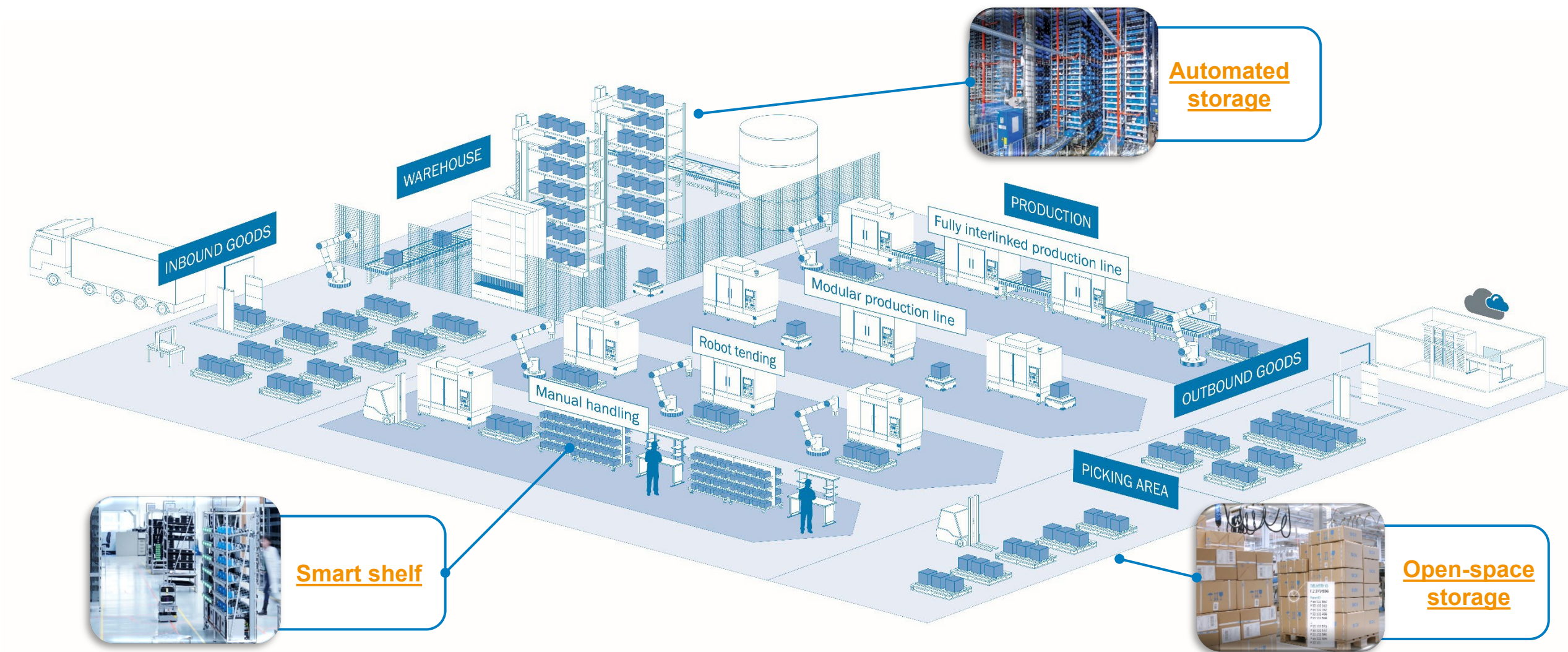
SICK offers [RFID and camera solutions](#) to automatically order goods stored in Kanban racks or other smart-shelf solutions.



Material storage

Automated storage, smart shelf, open-space storage

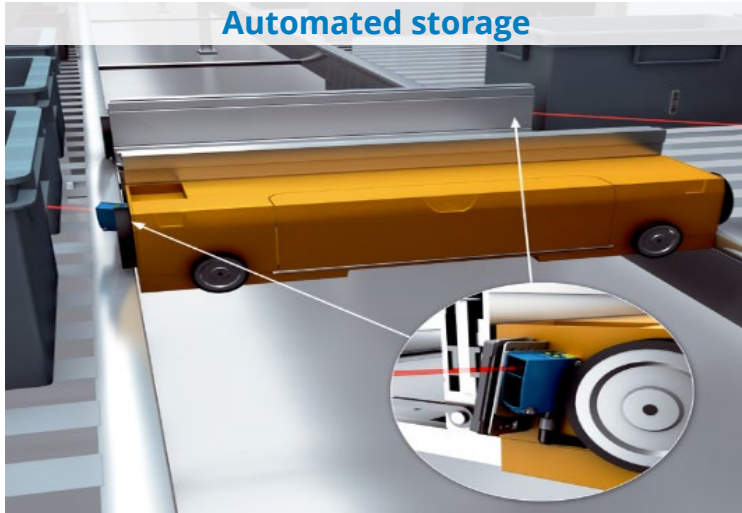
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Material storage

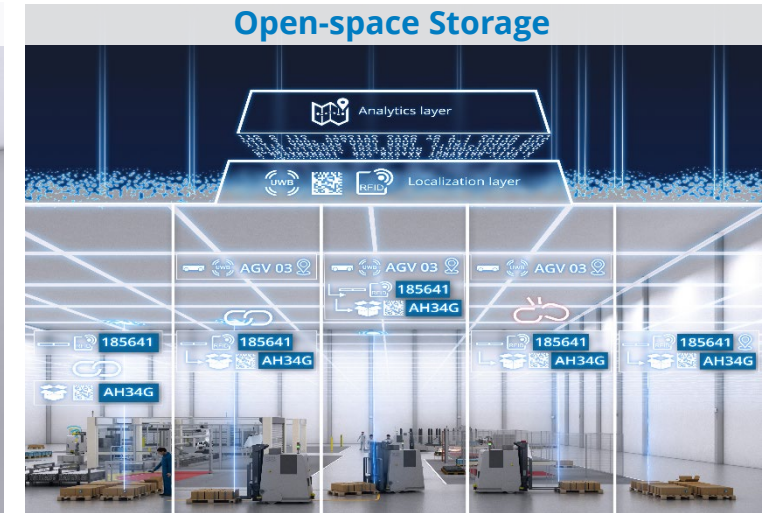
Automated storage, smart shelf, open-space storage



- › Shuttle systems
- › Automated storage and retrieval systems
- › Vertical storage
- › Special storage systems
- › Access control



- › Bin level
- › Bin identification
- › Integration into IT systems
- › Worker guidance



- › Material identification
- › Open Space localization
- › Bin identification



Material loading and unloading

Robotics, buffer storage, picking

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Always on time

The process of automation has **no limits**. Automation has therefore pervaded the entire production material flow in addition to incoming and outgoing deliveries, during picking processes, or buffer stores.

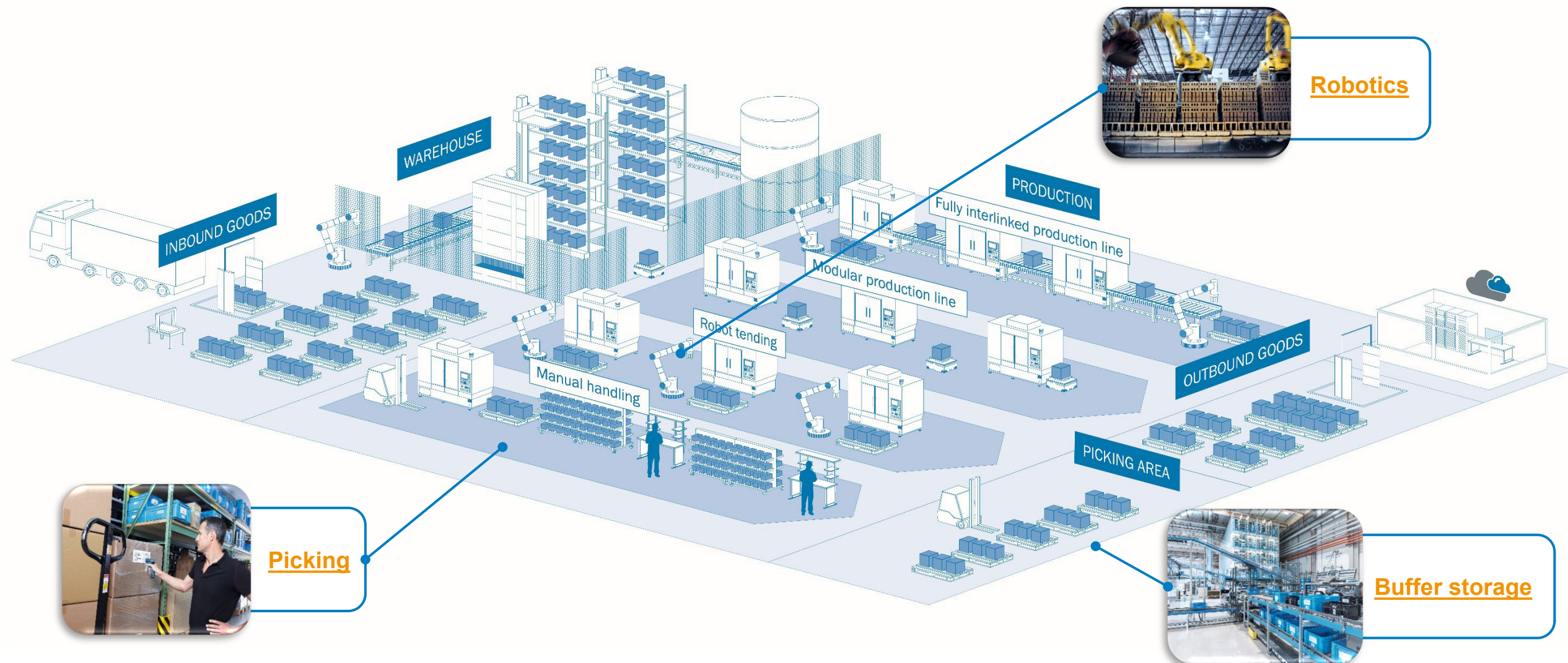
Loading and unloading machines or means of transport represents an important interface between the sub-processes.



Material loading and unloading

Robotics, buffer storage, picking

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Robotics

Picking

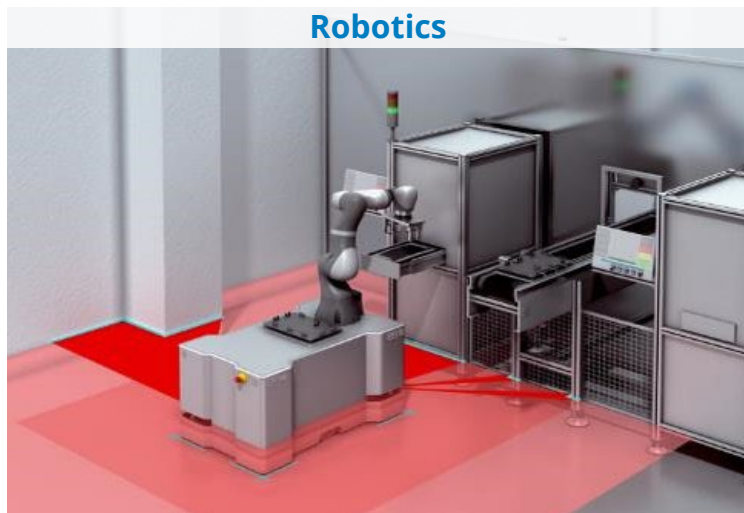
Buffer storage



Material loading and unloading

Robotics, buffer storage, picking

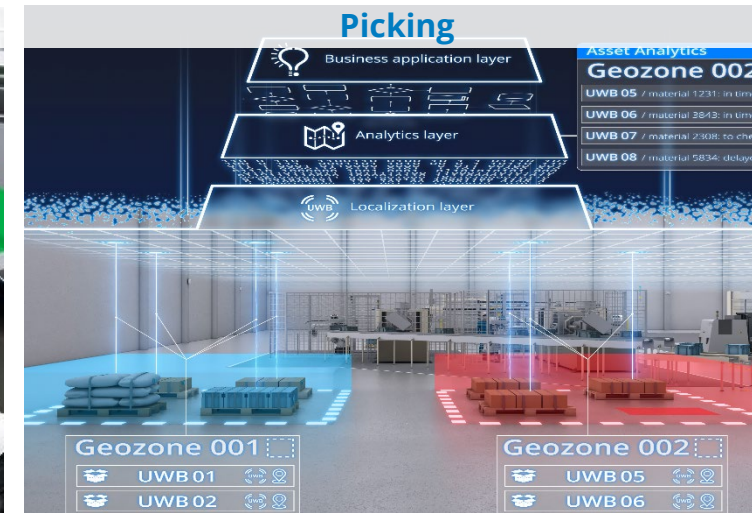
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- › Safe robotics
- › Robot vision
- › End-of-arm tooling
- › Palletizing applications



- › Bowl feeders
- › Material buffer
- › Stack loading applications



- › Solutions for more efficiency in
 - Preparation zone
 - Shipping area



Materials management

Identification, localization, handling unit management

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Orientation for value creation

When is which part in which place?

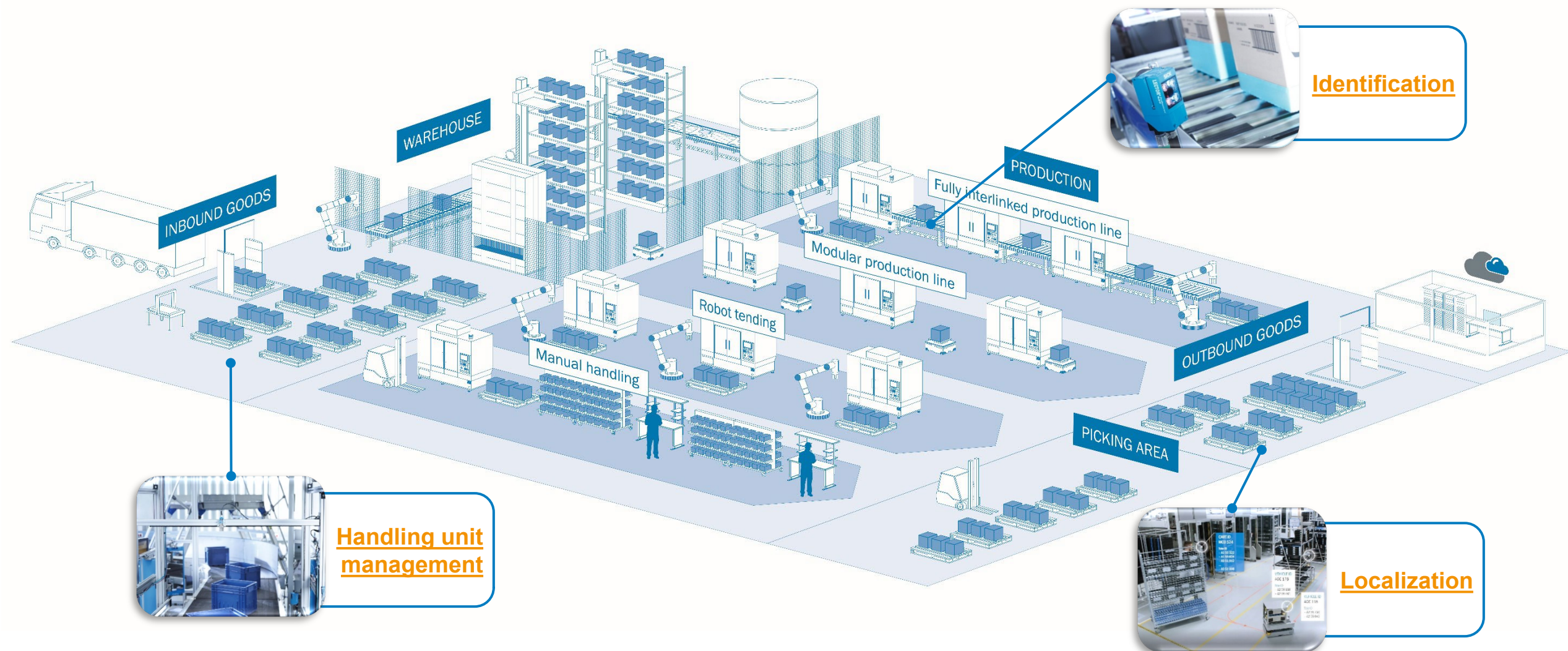
Answering this question exactly is the key to success for an optimal production process. The topics of localization and identification form the basis of improved material handling within production: sensors for localization, based on ultrabroadband, LiDAR, or RFID technology for instance, allow for **full transparency** for all of the significant objects required for production.



Materials management

Identification, localization, handling unit management

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Materials management

Identification, localization, handling unit management

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- › Material identification
- › Bin identification
- › Workpiece carrier identification



- › Tag based localization of objects
- › Indirect localization of objects
- › Booking automation by localization



- › Bin identification
- › Bin palletizing
- › Bin inspection
- › Special carrier management



Data management

Connectivity, middleware, analytics

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Complete control

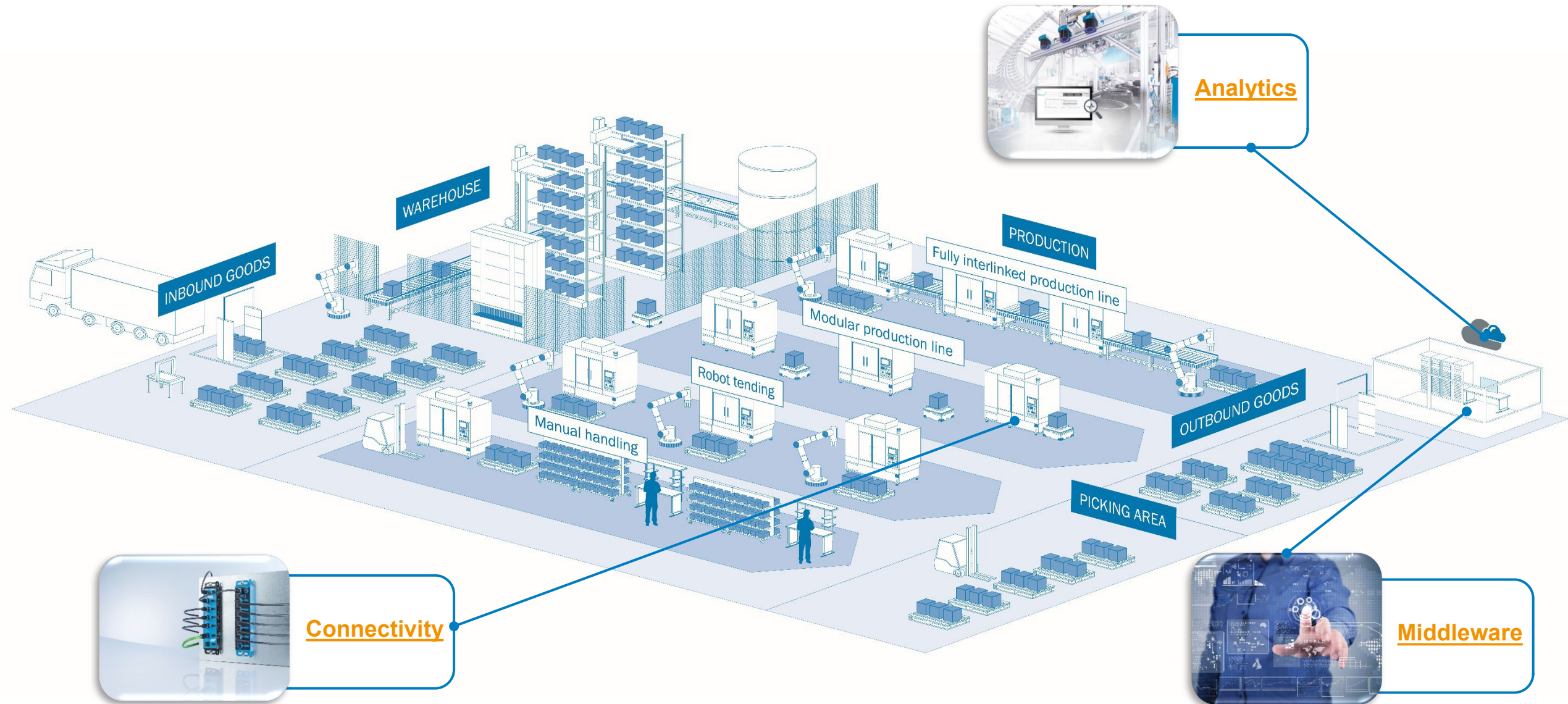
Lots of data is only useful if it can be integrated into the existing logistics and machine architecture. One particular challenge is in the vertical and horizontal integration here: the boundaries between networks or different software systems must be overcome, sometimes even beyond company boundaries. They ensure that your collected [information](#) can be called up from [anywhere](#) at [any time](#) and is also used [profitably](#).



Data management

Connectivity, middleware, analytics

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Analytics

Connectivity

Middleware



Data management

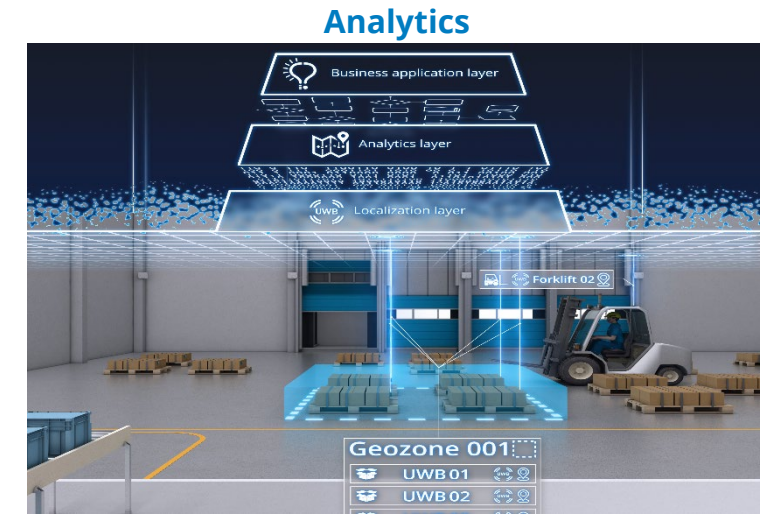
Connectivity, middleware, analytics



- › Integration Products
 - IO-Link Master
 - Gateway systems
 - Sensor Integration Machines



- › Middleware for easy Data Exchange
 - IO-Link Data Access
 - HERMES Standard

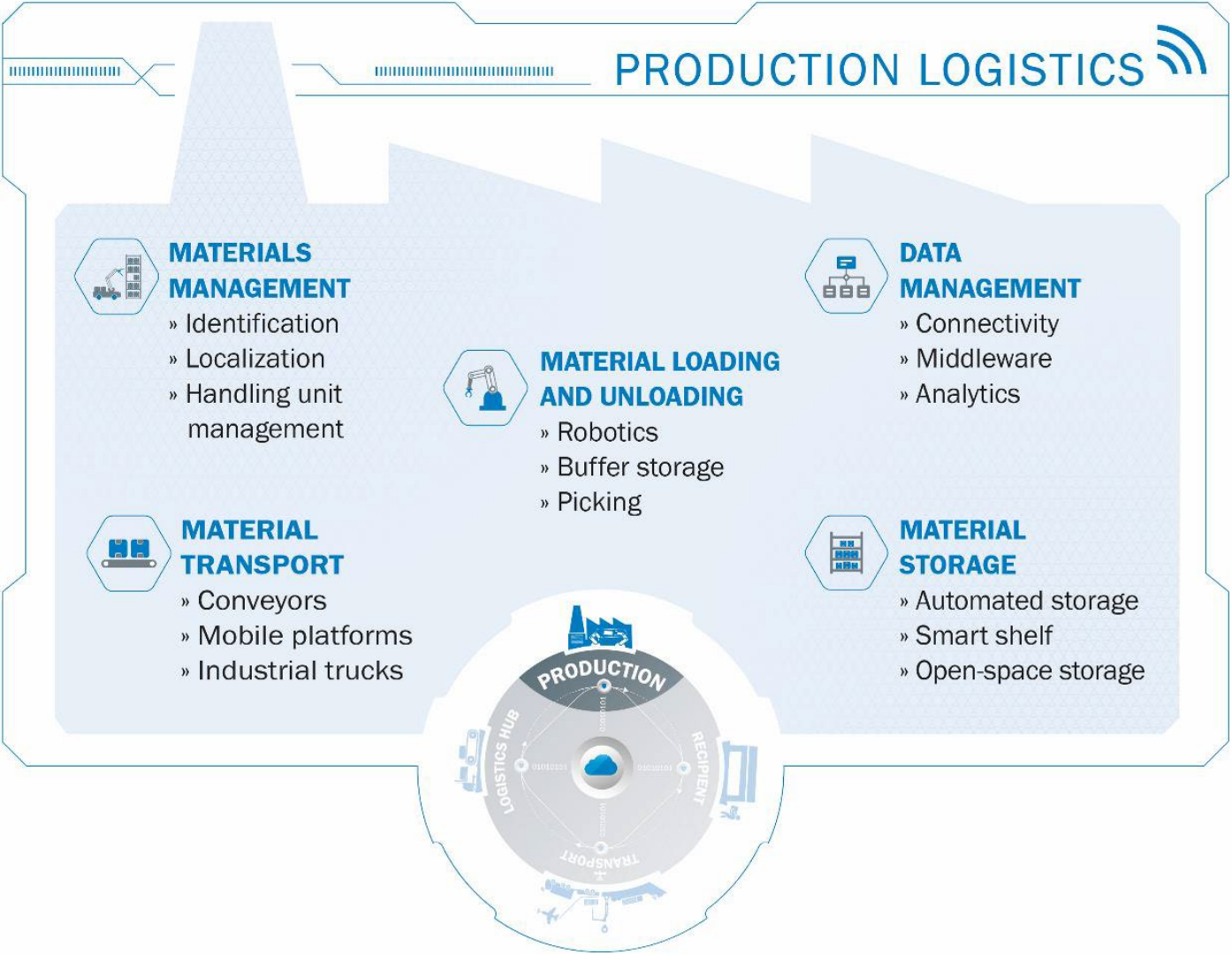


- › Analytics Software solutions:
 - Asset Analytics
 - Safety Analytics
 - Tire Analytics
 - Package Analytics



Production logistics

Closing the circle





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SICK is closing the circle