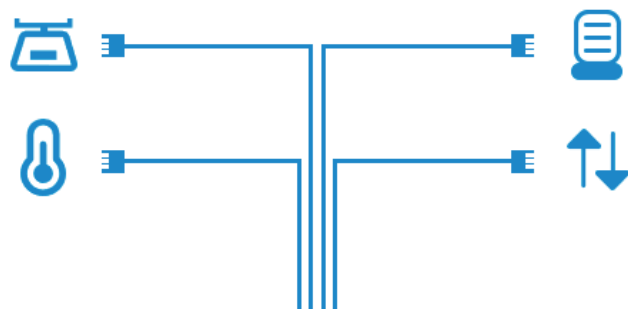


# ■ Intralogistics: Automated SAP processes

Four scenarios using the  
MSB Device Connector



External peripherals directly  
integrated into SAP, without  
middleware



Only with standard SAP on-board  
equipment in ABAP



Automated  
End-to-end processes

# Smart, mobile Processes in Intralogistics

To remain competitive, companies are under constant pressure to optimize. Part of this optimization is the digitalization and automation of corporate processes. This, in turn, leads to an increased effort in the IT departments of the companies. Through intelligent standardization and integration, the Mobisys Solution Builder (MSB) and MSB Device Connector support IT departments to constantly optimize processes without increasing the costs immeasurably. IT can thus react in a relaxed manner to the constant change. For mobisys, the reduction of complexity is in the foreground.

By connecting mobile computers and tablets to stationary scanners, automated storage racks or transport robots, employees can access up-to-date data in real time, save unnecessary paths, and make better decisions through higher data quality. In addition to the MSB, which transforms complex SAP processes into simple dialogs and brings them to the mobile end devices, the MSB Device Connector also supports the connection of external peripherals, such as weighing systems, automatic storage racks, control technology and, more recently, robot like warehouse assistants.



## **One app for all mobile processes**

Logistic employee work quickly and pragmatically in a field of application in which a lot has to be done in a short time. The clear user guidance of MSB App ensures the correct execution of the work steps and a high quality of the data. The big plus: The MSB App is device- and operating system-independent. Thus, SAP Mobility can be implemented directly with the existing hardware and an upgrade of the terminals is possible at any time successively. Picking, putaway or physical inventory are classic examples of system-guided processes.

## **Individual processes thanks to integrated developer tool**

With the MSB Screen Designer, ABAP developers create or extend pixel-based MSB applications quickly and easily. Easily change existing MSB screens or create new layouts and save them directly in your SAP system. The adaptation of existing MSB applications is also simple and flexible – with minimal training.



## ✓ Scenario 1:

Determine the weight of packages in the packaging process

A simple example of the benefits of connecting external peripherals to a company's SAP system is to determine the weight of the shipping process. After a consignment has been picked and packaged, the weight of the package, whether it is a pallet or a package, must be determined. For this purpose, the package is usually placed on a scale, the weight is read and manually added to the shipping system. This can not only lead to an incorrect assignment, no, it can even creep in unnoticed reading or transmission errors.

The **MSB Device Connector** provides a solution, as it enables the direct connection of weighing systems to the SAP system – without any middleware. This allows the weight to be transferred directly to the system or to the mobile dialog screen. The employee has previously logged on to the scale and now scans the barcode of the package (e.g. HU number) on the scale. The SAP system then sends a command to the scale, which in turn responds with the weight. The weight is automatically inserted and saved in the corresponding input field of the current screen. The result is a process that is seamlessly integrated with SAP.



## ✓ Scenario 2:

### Connection of a paternoster rack in the picking process

Especially in the storage of small parts, automatic storage racks, such as Pater-noster shelves are used, which work according to the principle „goods to peop-le“ instead of „people to goods“, as is usually the case. These offer a high storage capacity with a small space requirement. However, if storage racks are not networked with the warehouse management system, the warehouse employee must enter the requirements one after the other via the control system of the racking system and the trays must be approached for removal. This is ineffecti-ve and takes a lot of time.

The process is significantly more efficient when the storage rack is connected to and directly controlled by the SAP system. The transport order can thus be called up on the mobile device or a stationary terminal using the MSB applica-tion. The command to request the required tray is issued directly from the SAP system and can then be confirmed directly.

The connection via the **MSB Device Connector** directly in the leading SAP system – without any further middleware – ensures that the data in the SAP system is always up-to-date. The control over the optimal sequence in the processing of warehouse orders also remains in the SAP system.

## ✓ Scenario 3:

### Connection of autonomous transport systems

In the past, automated guided vehicle systems were complex systems with their own master computers and extensive control infrastructure. Here, too, developments in recent years have moved toward more intelligent and easier-to-implement systems.

So-called autonomous robots (e.g. from Fetch Robotics) scan their surroundings, can detect obstacles independently and move safely inside buildings without any control cables or complicated positioning. With the help of the **MSB Device Connector**, such systems can be very easily integrated into SAP processes, for example, in order to autonomously execute drive commands for replenishment in production or to supply picking stations with replenishment in the warehouse.



## ✓ Scenario 4:

### Temperature monitoring and documentation in the production process

In production, companies often face the challenge of meeting certain parameters during the production process and also having to prove them for warranty reasons, such as a certain temperature window during a process section. With the **MSB Device Connector**, sensors that measure this data can be connected directly to the SAP system and queried cyclically.

If the production order is now started via a mobile device, the required measurement data of the sensors can be determined with a direct reference to the production order at a constant periodic interval. The data is enriched with further production-specific parameters. And stored in a customer-specific table in the SAP system.



# MSB Device Connector

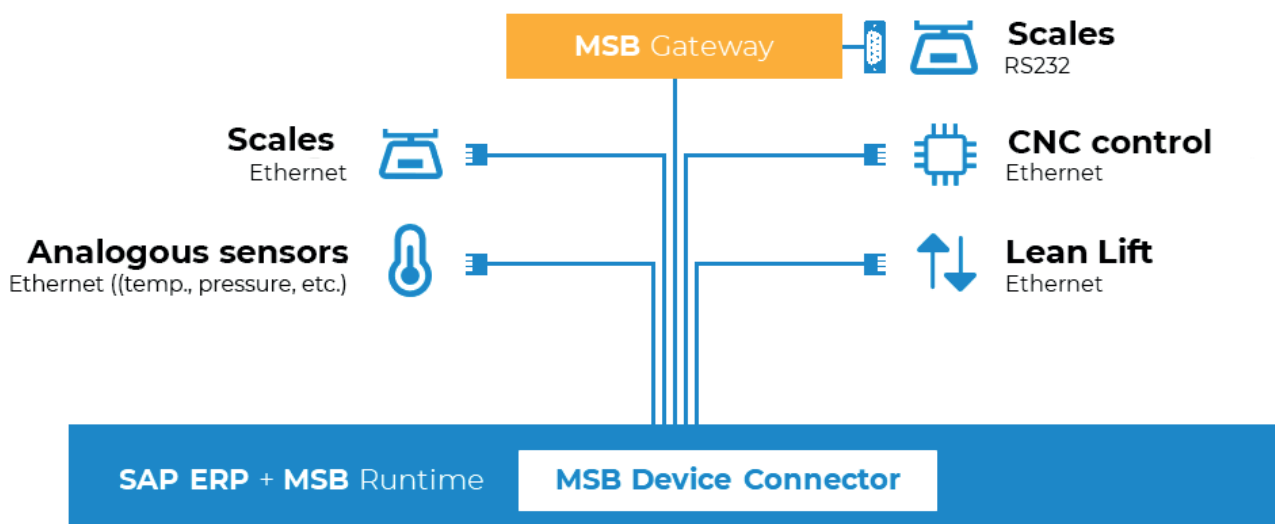
With the MSB Device Connector, a large number of different devices can be directly connected to the SAP system, thereby ensuring secure and direct communication and control. On the one hand, commands can be sent from the SAP system to the devices, e.g. to control a specific compartment of an automatic storage rack, on the other hand, data such as the weight can be requested from a scale, received and processed further in the process.

The **MSB Device Connector** is a tool developed entirely in ABAP. It provides communication and conversion routines that convert incoming and outgoing data and prepare and process it in ordinary

ABAP function modules. Depending on the device type, the communication can be uni- or bi-directional.

With the help of the MSB Device Connector, various scenarios (as described above) can be implemented in ABAP using only standard SAP board tools.

Comprehensive configuration tables allow the developer to connect virtually any different end devices to SAP. A combined use of mobile data acquisition in conjunction with the MSB Device Connector is the basis for implementing smart, efficient and simple mobile processes.



# MSB Gateway

For a serial connection (e.g. RS232), the MSB Gateway is required. The MSB Gateway is a service that runs on any Windows computer or on a small low-maintenance top-hat rail PC in a control cabinet and can be used by several simultaneously. It can be used by several terminals at the same time. If the MSB Gateway computer is located too far away, com servers are an option. A com server converts the serial signal to TCP/IP, feeds it into the Ethernet network, and sends it to the MSB Gateway.

Terminal devices communicate with the upstream MSB Gateway via either serial or Ethernet interfaces.

It forms interpretable http/https requests from the data packets, which can be accepted and processed by the MSB Device Connector on the SAP side. This all takes place in just a few milliseconds without any delay.

The MSB Gateway requires only a small amount of resources, so there is no need for a separate machine sizing.



## **Possible devices for connecting to the MSB Device Connector:**

- Scales
- Stationary barcode scanners
- Display boards, displays, visualization displays
- Paternoster and other storage rack systems
- Autonomous storage robots
- Analogous sensors
- Any device or controls with Ethernet interface

## **Supported protocols of the MSB Gateways:**

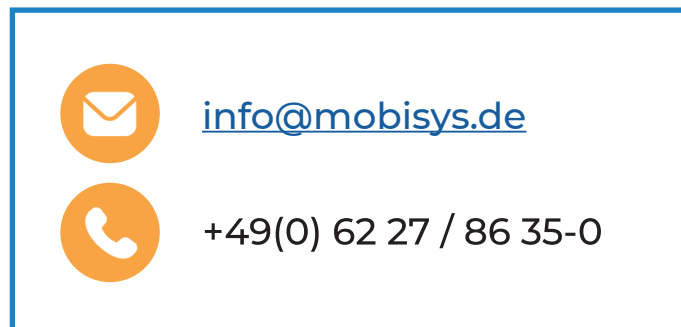
- http/https
- TCP/IP
- UDP
- Siemens 3964R
- Serial (RS232/RS422)
- File sharing

# Contact

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