



# INTRALOGISTICS AT ITS BEST

[WWW.BSS-MATERIALFLUSSGRUPPE.DE](http://WWW.BSS-MATERIALFLUSSGRUPPE.DE)

**BSS**  
MATERIALFLUSSGRUPPE





INTRALOGISTICS AT ITS BEST.  
FULFILLMENT SYSTEM SOLUTIONS!



GENERAL  
CONTRACTOR OUT OF  
**PASSION**

## THE COMPANY

BSS has been synonymous with intelligent intralogistics for more than two decades now. As a general contractor, we plan and build or modernise automated logistics systems such as high bay warehouses, small parts storage facilities, sorting systems, order picking systems or even complete logistics and distribution centres for customers in industry and retail.

Our solutions range from simple, part-automated systems to complex high-performance facilities. We build your warehouse or logistics solution as turnkey projects and complete with all required systems and functions.

On request we also provide all construction work such as preliminary building works, steel-frame constructions, roof and ceiling coverings as well as technical building installations – all from one source.

Our in-house software systems (BSS-LMS) for management, control and organisation of your logistics processes play a central part in the BSS logistics systems. They are easy to configure and can be linked with all customary system environments – for efficient and transparent intralogistics.



## PRODUCTS AND SERVICES

### → Warehouse systems

Automated high bay warehouses for pallets, mesh pallets and special load carriers  
Automated small parts storage for containers, trays and boxes  
Deep freeze storage  
Sorting systems  
Production buffers  
Shuttle systems  
Logistics and distribution centres  
Special installations

### → Conveyor systems

Pallet handling equipment  
Container handling equipment  
Tray handling equipment  
Box handling equipment  
Conveyor technology for special load carriers  
Electric suspended tracks and pallet tracks

### → Stacker cranes (STC)

Pallet STCs  
Container STCs  
Tray STCs  
Box STCs  
Stacker cranes for special load carriers  
Shuttle systems for containers and boxes

### → Order picking systems

**FLOWPICKER® (BSS high capacity order picking system for packing units)**  
Multiple order picking using multi picking stations (“goods-to-man”)  
“Man-to-goods” order picking from shelves and flow racks with manual or automated restocking  
Pick-by-light systems (PbL)  
Put-to-light systems (PtL)  
Pick-by-voice systems (PbV)

### → Software systems

Warehouse management (BSS-L)  
Material flow control (BSS-M)  
Automation and visualisation (BSS-S)

# INTRALOGISTICS AT ITS BEST.

## FULFILLMENT SYSTEM SOLUTIONS!

## THE GROUP – ROFA INDUSTRIAL AUTOMATION GROUP

BSS has been a member of the ROFA INDUSTRIAL AUTOMATION GROUP since 2006 as one of the worldwide leading companies in plant engineering for the automotive industry. With the inclusion of BSS, the performance range of the ROFA group now includes the area of intralogistics.

ROFA have been a partner of the industry in the field of automation technology, conveyor technology, intralogistics and special purpose machines for over 40 years.

A consistently international set-up has enabled ROFA to be present in all important markets worldwide with its own companies. This ensures that we are always close to our customers. Today the group has a global network of more than 800 highly qualified employees.



## RANGE OF PRODUCTS AND SERVICES OF THE ROFA GROUP

### → Overhead conveyor technology

Electric overhead tracks (heavy-duty, C1 profile and small loads)  
Power & free systems  
Overhead cable tracks

### → Floor conveyor systems

Electric tracks  
Electric pallet tracks  
Belt and plate conveyors (steel, plastic, rubber)  
Worker and product belts (plastic, rubber)

### → Skid and container conveyors

Roller conveyors  
Belt and band equipment  
Chain conveyors (standard up to 2 t)  
Chain conveyors (> 2 t and custom solutions)

### → Unmanned transport systems

Electric floor tracks

### → Pusher systems

Skillet systems  
Friction conveyors

### → Special solutions

Transport of heavy loads > 5 t  
Scissor lifting tables < 4 t  
Vehicle transfer systems

### → Vehicle controls for electric overhead tracks and unmanned transport systems

### → Unit assembly | marriage

### → Testing technology for belt end





# AUTOMATED STORAGE SYSTEMS



## AUTOMATED STORAGE SYSTEMS

Automated storage systems are our world. As a one-stop provider, we deliver your warehouse system as a turnkey installation, including all required subsections such as preliminary buildings works, steel construction, roof and wall coverings, building technology, fire fighting equipment, automation equipment, computer equipment and all secondary services.

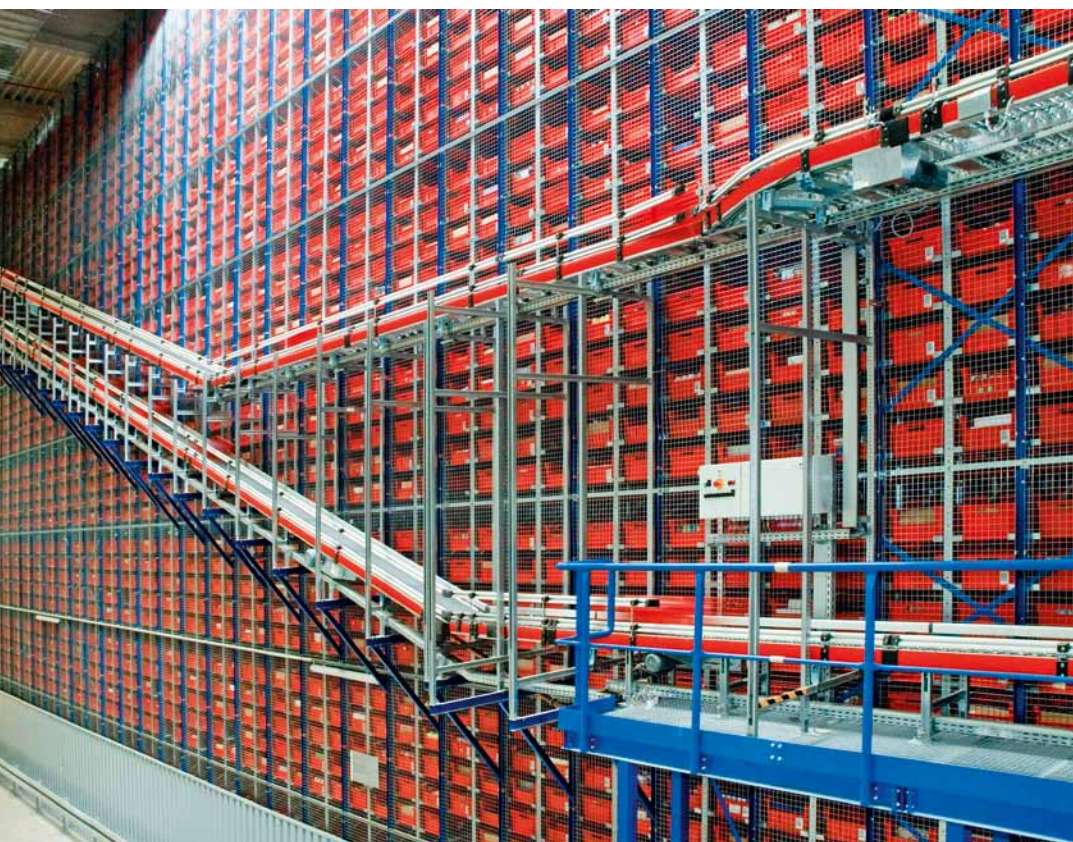
We automate processes wherever it is practical, taking into account all your individual logistics requirements. This includes semi automated logistics structures as well as high-performance systems for dynamic small parts storage and pallet storage.

Automated storage systems can be implemented from a height of only approx. 3 metres. There is almost no limit to the dimensions. In close cooperation with you, our specialists create a perfectly customised logistics concept ensuring best possible material flow and reducing error rates.

### BENEFITS

- Very low footprint required and optimum use of overall space
- Prevents travel times through automated conveying and provision of goods
- Reliable and traceable transport
- Transparent stock information in real time
- High availability





## CONVEYOR SYSTEMS

Our conveyor systems for containers, trays, pallets or special load carriers are optimally adapted to your range of products and the overall facility.

We determine your exact requirements and supply customised conveyor systems including automation and drive technology. Our experienced service team carry out commissioning, maintenance and service at your facility.

### BENEFITS

- High throughput
- Contactless storage of load carriers
- Gentle and traceable transport
- Low energy requirements
- Easy operation and simple maintenance



## STACKER CRANES

Our stacker cranes are used for automated storage of your goods in high bays. Depending on type, they move loads from 1 kg to 11,000 kg with system heights from 3 m to 45 m, achieving speeds of over 300 m/min. We determine cycle time, cost and energy consumption for you, taking into account practical reserves for future expansions and ensuring optimum dimensions of the devices.

Our shuttle systems are ideal if exceptionally high stocking/removal capacities are required for automated small parts storage, e.g. in connection with goods-to-man order picking stations, as buffer storage or for precisely sequenced provision of goods in production, assembly or dispatch. They can also be integrated into an automated small parts storage as a supplement to stacker cranes. In a shuttle system, fully automated small vehicles take on the transport of containers or boxes. In contrast to stacker cranes, one aisle can hold several vehicles above each other at the same time. It is even possible to use an own vehicle for each storage level. This achieves very high turnover rates in connection with fast stocking and removal lifters.

### BENEFITS

- Very low footprint required and optimum use of overall space
- High throughput
- High stock reliability
- Fast stocking and removal processes
- High energy efficiency
- Easy operation and simple maintenance







# ORDER PICKING SYSTEMS

## ORDER PICKING SYSTEMS

The core functions of any logistics system include efficient and optimum order picking. Individual items or packaging units of articles are collated for each order. This requires fast access to the entire stored range of goods. The selection of the ideal order picking concept for your company is determined by the specifics of your processes and products. Size, weight, fragility and number of items are just as crucial as the required order picking capacity and the available space.

Our warehouse management system BSS-L supports all common, but also special order picking principles for the fastest and most error-free order picking possible.

# GOODS TO MAN

### "GOODS-TO-MAN" ORDER PICKING

- Order picking guidance via on-screen dialog or LED pointer and put-to-light
- Multiple order picking possible for greatest possible efficiency
- low to medium capacity



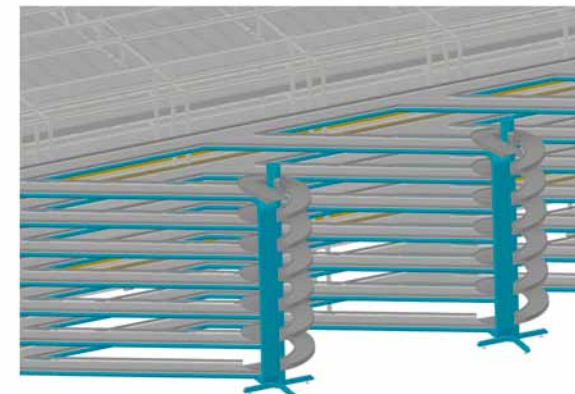




# MAN TO GOODS

## "MAN-TO-GOODS" ORDER PICKING

- Purely manual via order picking trucks or vehicles
- Use of sophisticated conveyor systems as transfer system or pick-to-belt system
- with manual or automated re-stocking
- Order picking guidance via picking sheet, handheld device, pick-by-light or pick-by-voice
- medium to high capacity



↑ Spiral conveyor in a FLOWPICKER® system

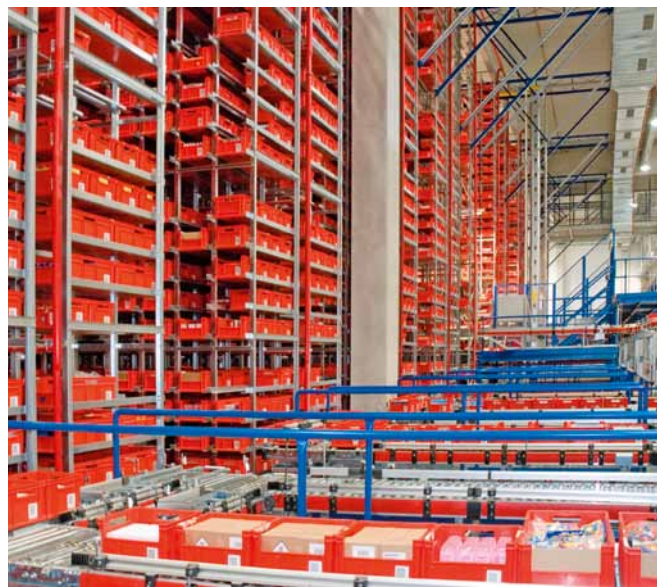
## FLOWPICKER®

- Fully automated order picking system for entire packaging units
- highest possible capacity
- highest possible ergonomics, no lifting or carrying of goods, no bending down or walking
- extremely low space requirements
- suitable even for difficult packing unit shapes
- no marking of the packing units (barcode, RFID, etc.) required
- highest availability through complete lack of shelf vehicles





# WAREHOUSE MANAGEMENT + MATERIAL FLOW CONTROL



## WAREHOUSE MANAGEMENT AND MATERIAL FLOW CONTROL

Intralogistics systems are unthinkable without modern software. Our software systems developed in-house for organisation, management and control of logistics processes are easy to configure and can be linked with all common system environments. They are suitable for small, semi-automated warehouses as well as for high capacity logistics facilities.

The BSS material flow computer BSS-M controls and coordinates all storage and conveyor elements and also coordinates the entire in-house material flow. It is the link between the underlying drive/sensor level and the warehouse management software. Its strategies ensure that pending transport orders can be carried out within the shortest time possible.

The certified BSS warehouse management system BSS-L is the long-term memory for your warehouse. It manages all

locations and provides the right strategies for best possible allocation of storage locations and work stations. From goods receipt, warehouse management and commissioning to dispatch – our warehouse management system provides all functions for a perfect flow of goods.

The BSS warehouse control BSS-S in turn moves conveyors and stacker cranes precisely to the millimetre and at the right time with the right speed, ensuring reliable and best possible execution of transport tasks.

The hierarchical menu structure of our software is easy to navigate and requires no special knowledge; it is described in our documentation to the last detail using numerous illustrations. A special training software which we supply before commissioning of the system along with customised training courses ensure that your employees get to know our systems quickly.

### BENEFITS

- Perfectly adapted to your customer processes
- Problem-free integration into other systems
- Option to expand for future requirements and technologies
- Integrated system visualisation for continuous control at the warehouse control centre
- Suitable for small warehouses as well as for high-performance logistics systems



## SOFTWARE ARCHITECTURE BSS-LMS

- Materials management (procurement, storage, disposition, evaluation)
- Production
- Finances and invoicing
- Controlling
- Quality assurance

ERP-SYSTEM

- Human resources
- Research and development
- Sales and marketing
- Maintenance of master data
- Document control

**INTERFACE TO HIGHER-LEVEL SYSTEMS:**  
Materials management system (e.g. SAP, Microsoft Dynamics / Navision, Pro Alpha, shipping systems, etc.)

- Location-related stock control
- Goods receipt process
- Order picking
- Packaging and shipping
- Dispatch process
- Inventory support

WAREHOUSE MANAGEMENT  
BSS-L 2010

- Multi-level order picking
- Returns handling
- Connection to carrier systems
- Management of sell-by dates and lots

- Removals:  
The source is a shelf location and the target is a location on the conveyor system

MATERIAL FLOW COMPUTER  
BSS-M 2010  
TRANSPORT ORDERS

- Control point:  
Source and target are locations in the conveyor system

- Stocking:  
The source is a location on the conveyor system and the target is a shelf location

- Order picking guidance:  
Visual / audible

- Repositioning:  
Source and target are shelf locations

**INTERFACE TO LOWER LEVEL SYSTEMS:**  
Stacker cranes. Conveyor systems, machines, etc.

AUTOMATION SYSTEM  
BSS-S 2010  
S7 LEVEL

- Stacker cranes:  
(Control via the accompanying control cabinet)

- Handling equipment:  
(Control is stationary)



## SYSTEM INTEGRATION AND GENERAL CONTRACTOR CONCEPT

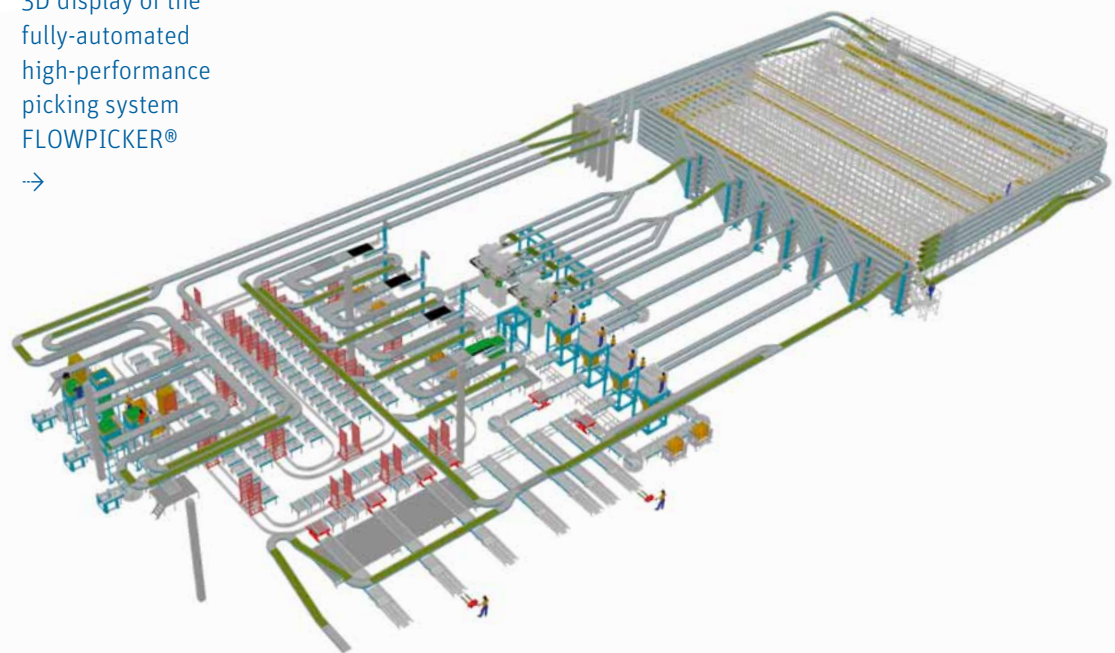
### SYSTEM INTEGRATION AND GENERAL CONTRACTOR CONCEPT

BSS as a system integrator is one of the leading providers of turnkey warehouses and distribution centres. We develop and implement simple to highly complex automation projects for your intralogistics. Our longstanding experience with projects of any size in virtually all industries makes us a competent and reliable partner for any project. Our professional project management as well as our structured and certified processes allow us to develop customised solutions with short planning phases and construction times. As a general contractor we are happy to take on full responsibility for carrying out the agreed scope of delivery – fully functional, on time and at the agreed cost.

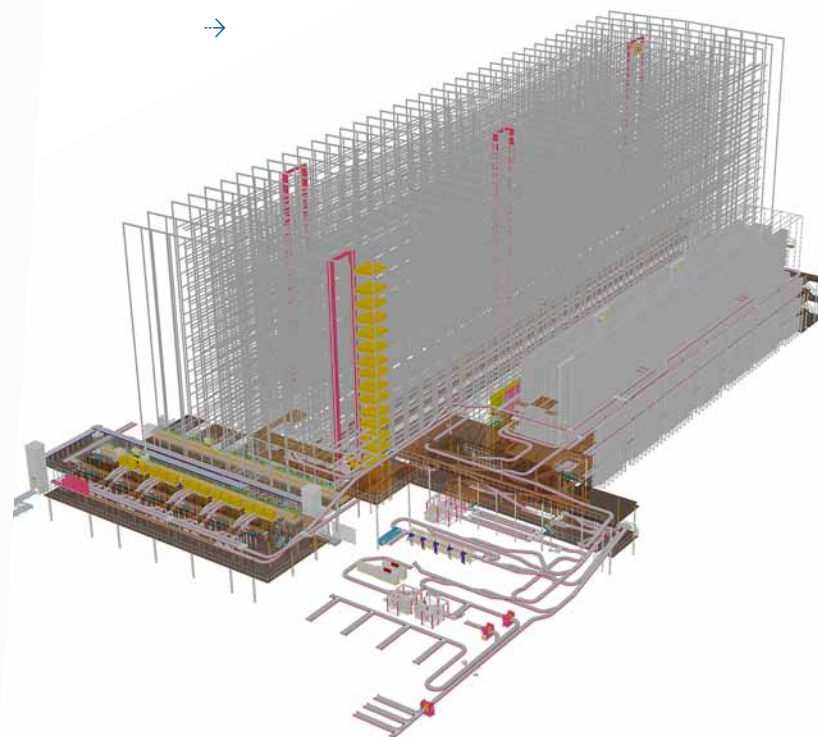
We are only satisfied when your system runs smoothly and will be available to you even after acceptance of your logistics facility for the lifetime of the system.



3D display of the fully-automated high-performance picking system FLOWPICKER®



3D display of a distribution and service centre



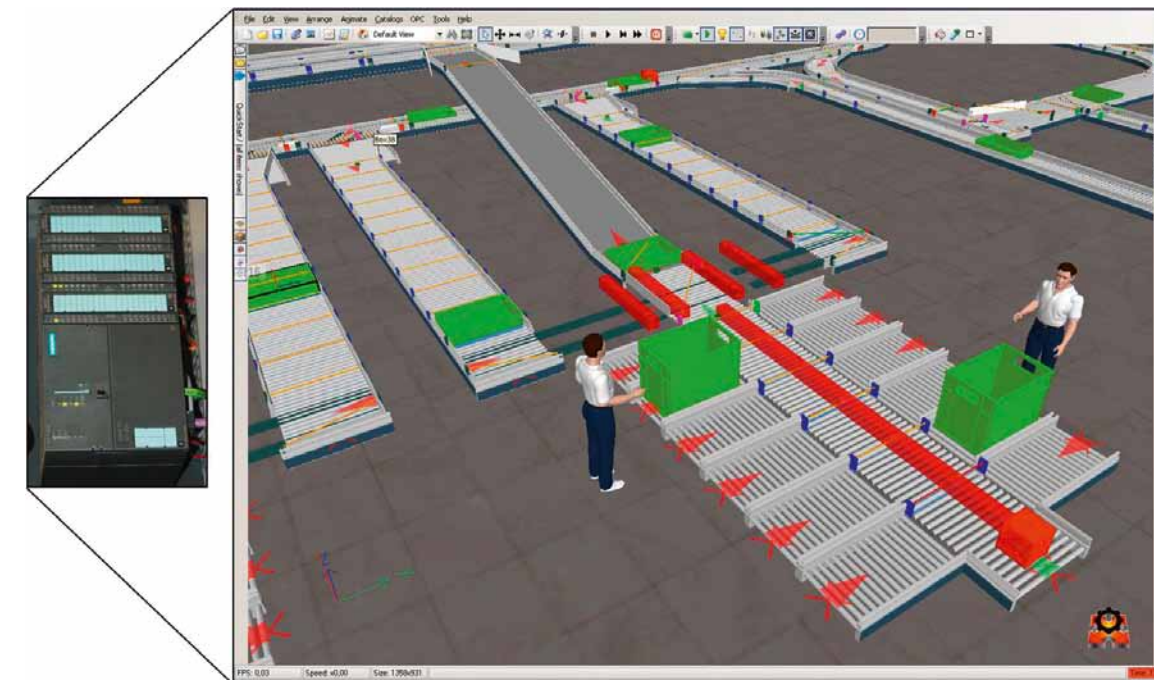
## INTRALOGISTICS CONSULTING AND SYSTEM CONCEPTS

Remain competitive through constant product availability and shortest possible order handling times. We support you and work in close cooperation with you to design a logistics system that is tailored to your requirements. To achieve this, we use modern planning software which provides the basis for making the right decisions.

Project planning is a matter of trust. Place your trust in us, because only few companies in intralogistics have a long planning tradition and extensive experience like BSS. We will be happy to visit you and discuss your logistical tasks, requests and expectations. Only the best solution can ensure the most economically efficient, flexible and fastest availability of your goods.

## INTRALOGISTICS CONSULTING + SYSTEM CONCEPTS

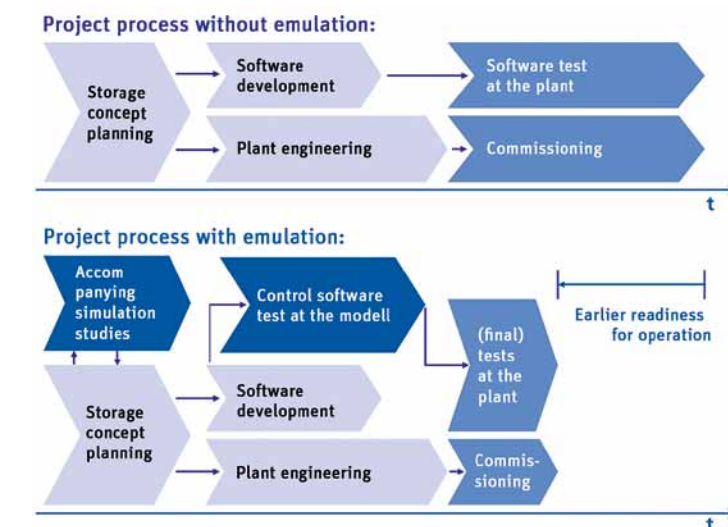
# SIMULATION + EMULATION



## SIMULATION AND EMULATION

Knowing in advance what will happen later on is essential to the reliable planning of your logistics system – regardless of whether it is a small or a large project. We simulate your logistics system in an animated 3D model to ensure that everything will be in the right place at the right time. This enables us to recognise and consider improvements before the project starts. Simulations also offer the benefit of allowing you to see your future facility in full operation using moving images. Our range of services also includes simulation-based commissioning including all warehouse control strategies.

This model (emulation) is so precise that it can be linked with a PLC and controlled by it – just like the real facility later on. It reproduces a data exchange between the control software of the real facility and a corresponding simulation model. This online linking can shorten the expensive and time consuming introduction phase of the PLC many times over. Thanks to the emulation, the PLC can already be tested under nearly realistic conditions before actual commissioning.







# MODERNISATION + EXPANSION



## MODERNISATION AND EXPANSION

The requirements of your logistics processes can change over the course of the years. New technologies emerge on the market and the distribution of goods is becoming increasingly complex. BSS logistics systems have a long service life if they are adapted in time and always kept to the state of the art. That is why most of our customers trust us with modernising or expanding their warehouses. Whether individual shelf aisles, conversions or extensions of conveyor elements or entire logistics centres: BSS modernise or expand your intralogistics including all equipment, controls and computer systems.

We also assist with moving premises, even transfer entire logistics facilities – from steel construction to automation – and ensure that everything is set up and put into operation again to your satisfaction at the new site.

As logistics experts, we increase the performance of existing intralogistics structures and implement our modernisation concepts in the shortest possible conversion times, without major impact on your logistics processes. Modernisation can also be carried out step by step without interrupting operations. Effective modernisation allows you to make your production and intralogistics more transparent, reduce system costs and achieve additional cost savings. And if any mechanical replacement parts should become unavailable because the manufacturer has gone out of business, BSS can provide the special service of in-house manufacturing.





## SYSTEM MAINTENANCE + SERVICE



### SYSTEM MAINTENANCE AND SERVICE

As a general contractor for logistics systems, we are not only the executing service provider but also your partner for many years after acceptance of the logistics system.

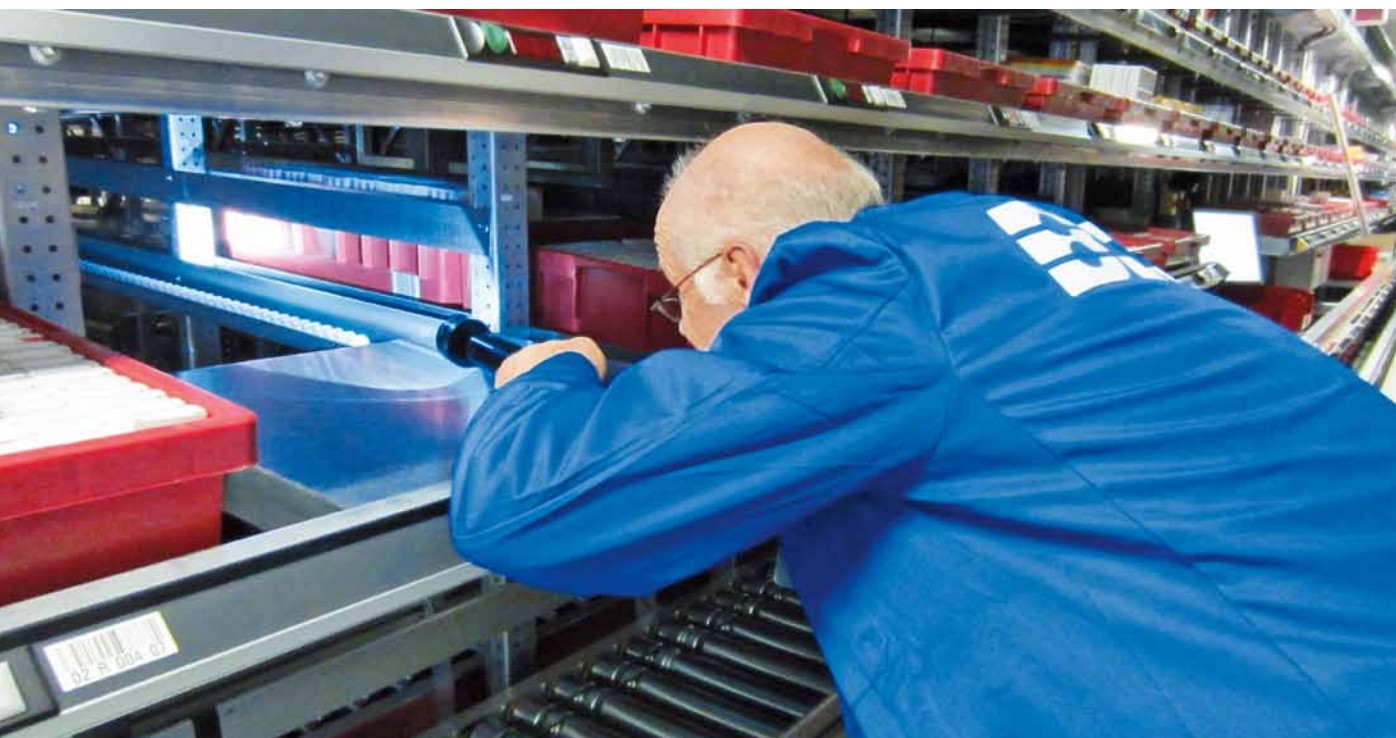
Our After Sales department is at your disposal after acceptance for all questions of system maintenance. We provide you with highly qualified contacts during the entire lifetime of your facility. They know your system in every detail and are available for all questions about your logistics system and beyond.

We also offer various services for your logistics system regarding health and safety. We support and qualify your personnel with our service modules such as **Shelf inspection DGUV-V3 testing**, **PROFIBUS measurement** and **Height rescue** as well as different operator and maintenance training courses which can also be customised. We help you to ensure that you can use your warehouse under the best possible safety conditions in the long term.

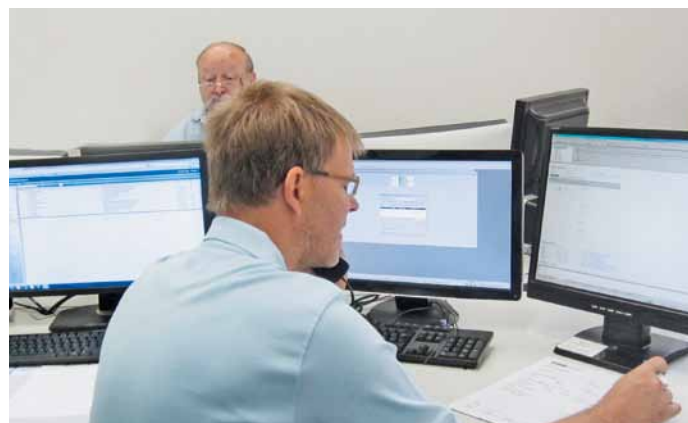
#### BENEFITS

- 24/7 on 365 days a year
- Immediate support from the BSS Hotline
- Immediate start of fault tracing through direct contact to our specialists
- Remote access to control systems and computer systems
- Remote service and remote monitoring of databases and computer systems
- On-site service for fast and professional error analysis and recovery
- Advice for optimising your logistics system
- Service modules for health and safety
- Customer-specific training packages
- Spare parts service
- Maintenance service
- Repair service





## SYSTEM MAINTENANCE + SERVICE



### OUR SERVICE MODULES

#### → STEEL CABLE REPLACEMENT

Early identification of signs of wear on your stacker crane steel cables

#### → DGUV-V3 TESTING

Maintaining and checking your electrical systems

#### → HEIGHT RESCUE

What to observe: training and equipment

#### → PROFIBUS MEASUREMENT

Minimise the failure risk for the central nervous system of your logistics system

#### → SHELF INSPECTION

Maintaining value and safety for your warehouse based on the strict legal stipulations



And if something still goes wrong, you can reach us at the BSS Hotline around the clock on 365 days a year. If necessary, our specialists for IT, control and technology can access your system remotely to provide help as soon as possible. If you require assistance on site, our trained service engineers are always ready to redress the problem as quickly as possible.

### CERTIFIED QUALITY

We have proof that our processes are structured and traceable. Every year, BSS is re-certified to ISO 9001:2008 to prove to our customers that they are in safe hands with us. Because product quality alone is no longer enough for long-term customer satisfaction – everything around it has to be right as well. That is why at BSS you receive an “all-inclusive, no-hassle package”.

Our BSS-LMS software package is additionally certified each year by the Fraunhofer Institute for Material Flow and Logistics.



Management System  
ISO 9001:2008

www.tuv.com  
ID 9108616799







### OUR EMPLOYEES

Our highly qualified and committed employees ensure your long-term success. To ensure that it stays this way, our employees regularly take part in special training sessions to learn about the latest technological developments – to provide you and your staff with the best possible support.

Good employees are hard to find. We train our own apprentices to prevent a future shortage of qualified staff. Anyone interested in apprenticeships as “Electrical engineer for plant technology” or “IT specialist for application development” is welcome and will be offered a permanent position at BSS if they show good performance.

### SUCCESSFUL COMPANIES TRUST IN BSS

ROSSMANN



Berning  
SMART FASTENERS



Bohle

elringklinger



GIRA



STADA  
Arzneimittel

VOITH



BRAX  
FEEL GOOD



EJOT



TITANIA  
MADE IN GERMANY



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