Autonomous transport solutions for the centralised control over material flow from the truck
BHS iMotion: The future-orientated transport solution for autonomous material flow in Industry 4.0!

CENTRALISED GOODS FLOW CONTROL, AUTONOMOUS FORKLIFTS AND INTERNAL SHUTTLE TRANSPORT LINKED PERFECTLY.

With BHS iMotion en route to fully automated transportation of goods for INDUSTRY 4.0

Automation and control is our world! We, BHS Intralogistics GmbH, a competence joint-venture between BHS Corrugated, the globally leading plant constructor in the corrugated cardboard industry and KS CONTROL, an automation and control specialist with an international orientation, conceive practice-oriented, pioneering automation and logistics solutions and their realisation in new systems and warehouse modernisations using hardware and software from one source.

What distinguishes BHS iMotion from the usual logistics systems

Firstly, we automate the unloading and loading of the truck right from/to the road, and secondly, our flexibly deployable goods flow control software BHS iCMS with controlled integration of the autonomous, laser-guided BHS iLifters and camera-controlled BHS iShuttles provides efficient and cost-saving internal transportation of goods from the truck into storage and onward to production facilities.

OUR GOALS:
- to automate loading processes
- to perfect load tracking
- to avoid errors in material flow
- to optimise the deployment of personnel

The automatic, driverless loading and unloading of piece goods offers advantages for consignees and suppliers. Firstly, there is a saving in terms of personnel and time, and, secondly, a one-off camera reading of the bar code on the piece goods ensures further goods tracking without bar codes.

The right material at the right time in the right quantity and at the right place. Thanks to the laser-controlled path guidance and camera-supported storage bin recognition, upon call-off the BHS iLifter can place piece goods centrally and flexibly in interim line or block storage near the picking station.
HARDWARE AND SOFTWARE: THE TOTAL ONE-STOP SHOP SOLUTION FOR CENTRALISED CONTROL OVER THE FLOW OF GOODS

INDUSTRY 4.0 – from this perspective BHS iMotion gets right to the heart of warehouse logistics, autonomous transport engineering, centrally controlled goods flow, software, real-time communication and documentation from goods arrival right through to dispatch with hardware and software Made by BHS Intralogistics.

Our autonomous transport and storage solution BHS iMotion with BHS iLifter and BHS iShuttle ensures higher productivity while lowering costs at the same time.

WAREHOUSE LOADING AND STORAGE LOCATION OPTIMISATION

The BHS iCMS warehouse management and control software in combination with the BHS iLifter and BHS iShuttle ensures dynamic and secure at loading and storage bin optimisation of single and double racks (LIFO/FIFO). Camera recognition of pallet storage locations on the BHS iLifter allows them to be optimised efficiently in the rack.

INTERNAL FLOW OF GOODS

The internal flow of goods/single items ensues with flexible adaptability to particular production and storage demands by independently navigating BHS iShuttle transport shuttles. The extremely low profile of the BHS-Shuttle simplifies integration with existing transport components.

FUTURE-PROOF, FULLY NETWORKED

The innovative, centralised BHS iCMS goods flow and control system, which is compatible with existing PPS-, ERP- and SAP systems, was created by us in house specifically for modern warehouse logistics. It can be flexibly adapted at any time to suit changing or future transport and warehousing needs.
BHS iLifter: Latest generation autonomous electric forklifts with up to 10 t payload

AUTOMATIC VS. MANUAL – FLEXIBLE FOR ALL TRANSPORT TASKS WITHIN THE BHS iMotion LOGISTICS PROCESS

In contrast to conventional AGVs and lifting trucks, the BHS iLifters are designed primarily for automatic operation but may also be operated manually at any time in undefined circumstances or if the need arises. Here, the assignment of the load is independent of the operating mode. Another advantage of being able to switch from automatic to manual operation is: Like normal forklifts, BHS iLifters can also be used outside of the networked goods flow system.

For unloading and loading, transporting, lifting and stacking, our BHS iLifters utilise the latest, proven forklift technology. With a globally unique combination of pylon compact technology, 4-wheel dynamic steering system for tightest turning radius (as manoeuvrable as a three-wheel forklift) and the latest energy-saving lithium-ion high frequency battery technology for dynamic 24 hour operation, these high-performance forklifts set new standards in material handling.

Advantages of the BHS iLifter:
- Laser-based navigation
- Automatic forklift prong width adjustment
- Latest camera technology and LiDAR system for object recognition
- Safety control via safety wireless Ethernet
- Networked with BHS ICMS and fault detection system
- Battery management (optionally lead-zinc or lithium-ion batteries)
- 4-wheel dynamic steering system
- Hydro-pneumatic level compensation

BHS iLifter 360° navigation:

As a specialist in automation and control, we have redefined precision in spatial orientation and storage bin recognition by using laser- and camera navigation. Users are able to plan routes independently and redefine storage bins. The forklift uses a laser scanner to orientate itself to predefined spatial structures. A navigation algorithm reliably filters out any changes in the surrounding space due to deposited material or other vehicles. Four further safety laser systems serve to safeguard personnel and avoid collisions.
BHS iShuttle: Extremely compact transport shuttle with best-in-class payload up to 5 t

UNIVERSALLY DEPLOYABLE MULTI-CARRIER SYSTEM OF INDIVIDUALLY EXPANDABLE MODULAR DESIGN FOR THE INTERNAL TRANSPORTATION OF GOODS

Whether palletized goods or single items – the BHS iShuttles within the BHS iMotion logistics solution guarantee a flexible, reliable and efficient autonomous transport of piece goods and close a gap in the internal transport chain on the path to INDUSTRY 4.0.

The modular design of the BHS iShuttle compact system facilitates extremely low profile builds and makes its integration into existing customer transport solutions normally trouble-free. The two available control systems, 2D laser navigation or alternatively camera-based marker line guidance, allow the internal flow of goods to be easily and flexibly adapted to all spatial circumstances and different target locations.

If the volume of goods transported increases, additional BHS iShuttles can be integrated into the BHS iCMS overall system without problems.

BHS iShuttle control:

The optical path recognition of the BHS iShuttle is via 270° laser navigation or floor-directed via marker line guidance using the latest camera technology. Two further safety laser systems serve to safeguard personnel and avoid collisions.

All internal transport tasks from the warehouse can be realised easily, efficiently and with expandability by using these two guidance systems for any purpose such as commissioning, production lines/machinery, assembly stations and dispatch.

BHS iShuttle: Individual in size and transport set-up

The innovative, compact and extremely low profile BHS modular system allows efficient size matching to customer specific transportation tasks.

Multifunctional use is assured by diverse kinds of platform superstructure such as lifting table, push & pull function for goods pushover, belt or chain conveyors and special holders for payloads up to 5 tons.

Since the base chassis is only 200 mm high, integration into existing customer transport lines is usually trouble-free.

BHS iShuttle advantages:

- Optionally with 2D laser navigation or line-based guidance
- Various sizes and design variants
- Modern lithium-ion power source
- Non-contact charging function with battery management

- Optical, camera-supported marker line recognition
- 2-point laser collision avoidance and personnel safeguard with drive slowly and stop function
BHS iCMS: The revolutionary goods flow and guidance control software Made by BHS Intralogistics

ARE YOU PLANNING A NEW WAREHOUSE OR LOGISTICS CENTRE? DO YOU WISH TO MODERNISE AN EXISTING WAREHOUSE OR BRING GREATER EFFICIENCY INTO YOUR PRESENT LOGISTICS PROCESSES?

With the team at BHS Intralogistics you get a creative and dependable partner for individual, practice- and future-oriented software for turnkey implementation of the complete autonomous transport system.

OUR PLUS POINT: Decades of experience in automation and plant control for logistics and production companies.

BHS iCMS: THE KEY TO ALL-EMBRACING NETWORKED WAREHOUSE LOGISTICS WITH AUTOMATED AND PROFITABLE FLOW OF GOODS

With the revolutionary BHS iCMS goods flow and guidance control for automated, autonomous piece goods transportation from the road into the warehouse and production, our know-how is focussed on individual control and automation solutions. The innovative constructed software produced by us is future-proof by design and allows the central goods flow control system to be customised to meet new demands.

The integration of BHS Intralogistics’ own goods flow and control software BHS iCMS into the customer’s PPS-, ERP- and SAP systems opens the way to a swift realisation of your investment in an efficient, future-assured warehouse logistics.

BHS iCMS: The sector solution for logistics and production companies

For goods flow management, BHS Intralogistics is the right choice. Where standard solutions are inadequate, we offer intelligent, practice-oriented comprehensive solutions matched to the customer’s precise needs.

As a solutions provider for complex automation, assembly, inspection and control systems, we are a sought-after partner with decades of experience in highly diverse sectors.
As a dynamic competence-joint-venture and general contractor, we project, plan and implement autonomous material flow systems (FTS) as turnkey new plant and retrofit existing plant.

We don’t just deliver the hardware and software including system commissioning. On request, we work out a financing concept jointly with the customer or even take over operation of the system. Just ask us.
A strong joint venture en route to a highly flexible autonomous flow of goods

INDUSTRY 4.0

Since autumn 2018, BHS Corrugated GmbH, a machinery and plant construction company in Weiherhammer, Bavaria, and KS CONTROL GmbH, an automation and control specialist in Mintraching near Regensburg, have cooperated under the name of BHS Intralogistics GmbH based in Mintraching.

THE COMMON GOAL: Development and realisation of the automation of loading processes with autonomous transport systems for company-internal transport of goods.

Both competence partners, BHS Corrugated GmbH with a 300-year company history and market leader with sites worldwide and over 2,000 employees engaged in development and manufacture of complex cardboard plant, single components thereof and corrugating rolls as well as provision of services 24/7 on 365 days a year to ensure plant availability, and KS CONTROL GmbH, with decades of experience in automation and the control of production, assembly and inspection systems, bring in their comprehensive automation competence to BHS Intralogistics on the path to INDUSTRY 4.0.