

## Innovative Drive and Automation Solutions for the Airport Industry

### Cargo



## Cargo: Getting the Airport Industry in Motion

Airports where hundreds of airplanes take off and land around the clock need an incredible amount of planning and perfect coordination of complex processes. The growing focus on capacity and security issues, as well as shorter ground times, increasing competition among airports and stricter environmental regulations are presenting major challenges for the airport industry.

Each day, many tons of different kinds of goods are transported: letters, packages, valuable cargo, liquids, perishable goods such as food or flowers, machine parts, hazardous goods, live animals, etc. Special conditions, such as time buffers for customs inspections, must be observed both on board and during ground handling. In consideration of these

requirements and the available storage and transport space, material handling engineering plays a critical role. That's why airport operators choose partners who have in-depth knowledge of complex air cargo processes. SEW-EURODRIVE proves that it has this knowledge on a daily basis around the world.

For years now, drive technology "made by SEW-EURODRIVE" has played a vital role in ensuring smooth transport and logistics processes at a host of international airports such as Frankfurt, London, Paris, Hong Kong and Sydney. SEW-EURODRIVE is a family-owned, internationally successful

business with more than 15,000 employees and sales of over EUR 2.5 billion. With 77 Drive Technology Centers and 15 production plants in 48 countries, we keep the world moving every day. And we've been doing that for over 80 years.

## Whether it's heavy, liquid, living or hazardous – our solutions ensure reliable cargo processing

SEW-EURODRIVE is familiar with the airport industry's requirements for air cargo. Whether ULD materials handling technology, truck docks, storage/retrieval systems or modern electric mobility solutions – we use proven, reliable application solutions from our modular system to provide improved cost-effectiveness, flexibility and safety in all airport industry processes. A few examples of application solutions from SEW-EURODRIVE for air cargo are presented below.



### ULD materials handling technology ①

Sturdy, reliable materials handling technology that connects all the operative processes and complies with IATA guidelines is essential for air cargo. Various environmental conditions such as cooling chambers for easily perishable goods or uncovered apron areas must be taken into account. Our range of materials handling technology covers all aspects of safe materials handling, such as transport roller conveyors, rotary tables and transverse carriages for ULDs.

#### SEW-EURODRIVE products for your application:

- Gearmotors of the DR series
- CMP servo gearmotors
- Decentralized drive technology
- Contactless energy and data transmission

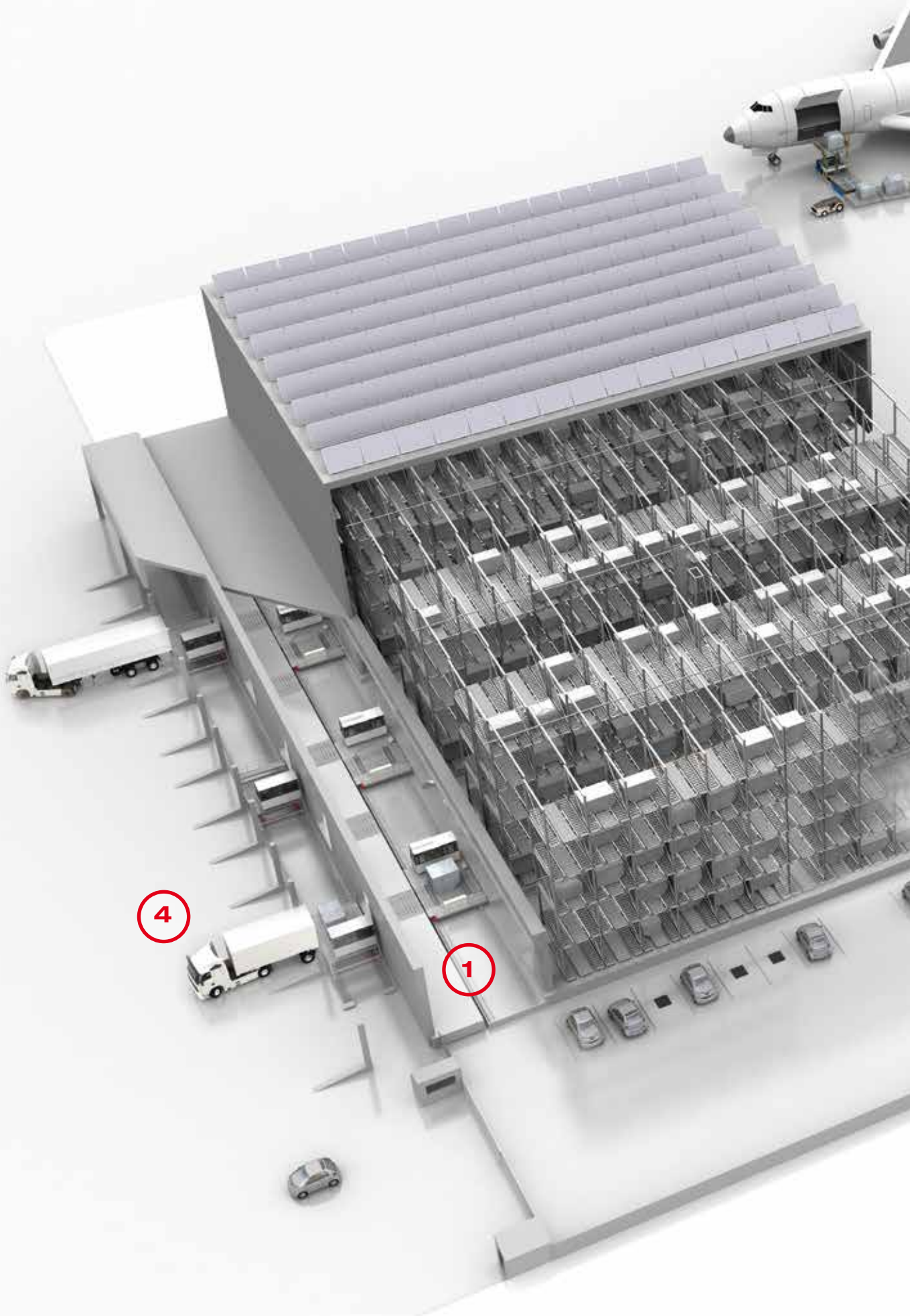


### ULD shuttles ②

At cargo airports, ULD containers must be quickly handled and moved in and out of temporary storage. One particular feature of ULD containers is that they require extensive contact surfaces. They can't just be supported on both sides like pallets, but must also be supported in the middle. As a result, today's storage solutions are based on mechanical roller conveyors on which the containers can be moved and deposited. These roller conveyors have a complex design, and, like all mechanical systems, are susceptible to damage and require a great deal of maintenance. Modern shuttle solutions, on the other hand, provide a passive storage setup without moving parts. To ensure a large contact surface, multiple narrow shuttles synchronously move a single container. This system solution from SEW-EURODRIVE ensures constant, smooth motion.

#### SEW-EURODRIVE products for your application:

- MOVIPRO® decentralized control panel with integrated MOVI-PLC®
- CMP servo gearmotors
- Decentralized energy modules with energy management
- Contactless data transmission









### Storage/retrieval systems ③

The size of high-bay warehouses is constantly increasing – and so are the requirements for storage/retrieval systems. Whether palletized goods or ULDs: With SEW-EURODRIVE solutions, your storage/retrieval system can reduce energy consumption by up to 50% or use a patented function to easily move around corners.

#### SEW-EURODRIVE products for your application:

- Gearmotors on the basis of the modular DR motor system in efficiency classes IE2 and IE3
- Alternative: servomotors of the CMP series
- MOVIAXIS® multi-axis servo inverters
- MOVI-PLC® motion and logic controllers
- Configurable Control Unit (CCU) with energy-efficient SRS application module
- MOVITOOLS® MotionStudio engineering software



### Truck docks ④

Truck docks allow cargo units to be loaded onto or removed from trucks. Because of the variety of truck models, the height of truck transfer points must be adjusted using truck docks. The docking process is supervised by an operator on a walkway on one side of the roller conveyor. Skirting protection prevents the trucks from damaging the conveyor equipment. The use of SEW-EURODRIVE's contactless energy and data transmission offers key advantages for docks used outdoors. Rain, snow and dirt have no negative impact on their availability.

#### SEW-EURODRIVE products for your application:

- Gearmotors of the DR series
- CMP servo gearmotors
- MOVIAXIS® inverters
- Contactless energy and data transmission



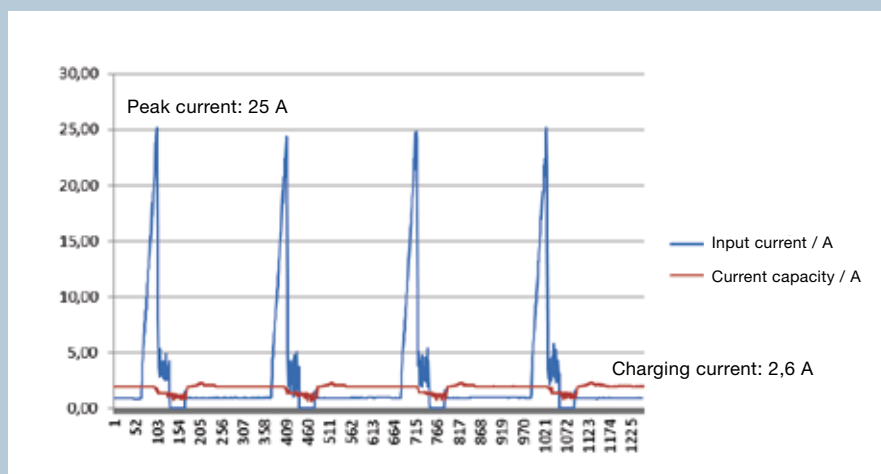
## Why just save energy? Energy management made by SEW-EURODRIVE

Energy is an increasingly important aspect of new projects, and with good reason.

On the one hand, the relevant legal requirements must be met, and on the other, customers want transportation of their goods to be as environmentally friendly as possible. SEW-EURODRIVE is a pioneer in its field that has launched the MOVIGEAR® mechatronic drive unit with IE4 certification and efficiency of well over 80% – an unprecedented value for gearmotors.

These drives are now reliably doing their job at numerous airports, and helping the environment with their efficiency. What's more, the drive specialist helps its customers address energy issues from day one, while offering a modern energy management system. The energy consumption of various applications and systems is determined, and various scenarios are calculated and simulated. One of SEW-EURODRIVE's

latest energy innovations is the decentralized energy module that does more than just efficiently store regenerative energy where it's generated. It's also separate from the grid, meaning that power surges, e.g. during acceleration, generally don't show up on the grid. The results are a lower connected load, more compact electrical installation and fewer harmonics for less contamination of the grid.



**Current consumption on pallet transfer shuttle: Red is with an energy module, blue without.**



## A modern system solution: SEW-EURODRIVE's storage/retrieval system

Space is in short supply at most airports. Temporarily storing as many containers as possible means stacking them high. This results in modern high-bay warehouses where dynamic and reliable storage/retrieval systems are used. Choosing an SEW-EURODRIVE system solution ensures innovation and high availability. SEW drives won't let you down, even under difficult conditions.

The contactless energy transfer system and decentralized energy modules offer innovative energy management, while SEW-EURODRIVE's own MOVI-PLC® controller with effiDRIVE minimizes energy consumption during travel and lifting movements. Safety systems from SEW-EURODRIVE offer compliance with all the relevant standards, and functions to ensure

safe operation of the storage/retrieval systems. SEW-EURODRIVE also offers various communication solutions such as slotted waveguide communication and an interference-resistant, shielded WLAN connection. Our decades of experience and expertise turn many individual components into a reliable system solution.

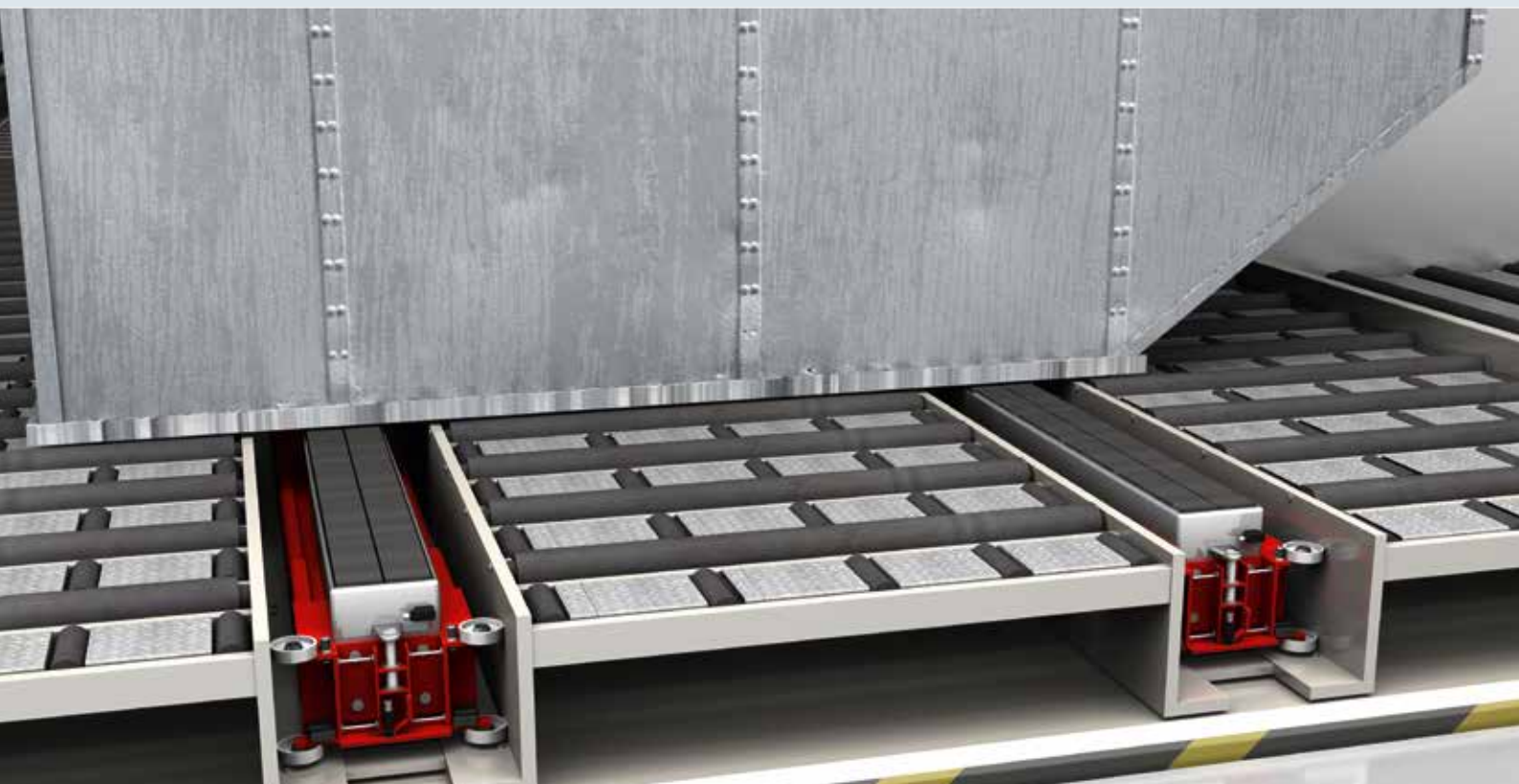


## Flexible logistics concepts with SEW-EURODRIVE's shuttle system solution

Modern warehouses not only have to have high storage capacities, but also have to be energy-efficient and very flexible. The previously popular roller conveyors are increasingly being replaced with modern shuttle solutions. These solutions can be used in various areas: as automated guided vehicle (AGV) systems on the apron or as a satellite solution on an SRS. Using them as a satellite is particularly advantageous.

The warehouse is easier to set up since the bays generally don't require driven roller conveyors. This reduces maintenance work and makes the entire system less susceptible to interference. The shuttles can be replaced quickly and easily so that goods can always be moved in and out of storage. In addition to highly efficient servo drives and SEW-EURODRIVE's own MOVI-PLC® controller,

innovative SEW shuttle solutions also offer appropriate energy modules, as well as safety and navigation systems. The energy modules can be charged either by contact or inductively, meaning contactlessly. The modern energy management system ensures that there is always enough energy available based on the travel commands and that the energy modules have the capacity to store regenerative energy.



## Benefit from the services of a global player

At SEW-EURODRIVE, the focus is on the customer. This was confirmed once again by the “Germany’s Customer Champion 2012” competition, in which SEW-EURODRIVE received awards for “Best B2B Company” and “Best Industrial Company.” The company ranked third among the German companies with the highest overall customer satisfaction in the competition. SEW-EURODRIVE’s goal is to be your first choice with a comprehensive range of drive technology products and services.

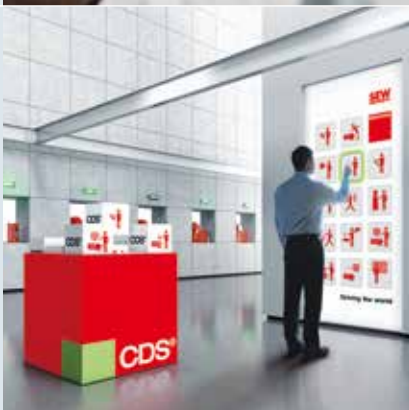


### **DriveBenefits – customized process solutions for your entire value creation chain**

DriveBenefits offer a variety of practice-oriented possibilities to accelerate processes in every value creation phase, to simplify these processes, and to handle them in a cost-optimized manner. As early as the engineering stage, you can use the DriveConfigurator as an ideal selection tool for drive components. All deliveries and their

internal further processing can be controlled efficiently using functional DriveTag labels. Selecting the suitable components and combining them to form an overall concept will give you sustainable benefits.

[www.sew-eurodrive.de/drivebenefits](http://www.sew-eurodrive.de/drivebenefits)



### **CDS® – The modular service concept**

Comprehensive and integrative services that can be tailored to the specific needs of every phase of the product life cycle make the CDS® Complete Drive Service from SEW-EURODRIVE the perfect solution. From startup to complete

maintenance management through to retrofit and modernization measures: CDS® offers solutions for all your requirements.

[www.sew-eurodrive.de/s\\_service/](http://www.sew-eurodrive.de/s_service/)



### **DriveAcademy® – Training “made by SEW-EURODRIVE”**

The central DriveAcademy® training facility in Bruchsal offers a wide range of courses from target group-oriented, certified product

training to specific working methods and individual coaching.

[www.driveacademy.sew-eurodrive.de](http://www.driveacademy.sew-eurodrive.de)



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## How we're driving the world



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