Cargo Handling Systems
Airport Logistics
Table of Contents

Who we are ... 3
... and what we do 4
Customer Logistics Analysis 6
Solutions and Concepts 7
Project Planning – Simulation – Design – Execution 8
Control Capabilities 10
Pre-Pack Truck Loading 12
Build-up and Breakdown 14
ULD Transportation 16
Storage of ULD’s, and Pallets 18
Mail Handling 19
Airport operators need strong partners to meet their service standards. Siemens Dematic is the world’s leading material handling solutions provider with extensive airport experience developed together with our airport partners world-wide.

We add value by working with our customers through the planning and development stages to identify the right balance of innovation and reliability. We are then able to use our global service, product and project know-how to develop a fully integrated solution.

Our product and service portfolio enable customers to single source their logistics solution by taking advantage of our in house know-how, including process analysis, design, manufacture, installation and support. This approach improves system reliability and performance by ensuring all integration and co-ordination issues are addressed by Siemens Dematic on your behalf.

Our commitment to our customers does not end at the completion of the project. We ensure high performance throughout the life cycle of the system through innovative post contract support services tailored to meet each customers requirements. Our global experience includes the operation and maintenance of airport systems.

Our global knowledge base covers more than 6,000 logistics installations (approx. 300 airport systems) and 21,000 employees worldwide. This knowledge is available to add value to your solution via our worldwide network of regional centres providing local access to global knowledge. We work closely with our customers at a local level, often providing specialists to work in integrated teams at the customers location or project base.

As a member of the Siemens Airports group we are able to offer the full spectrum of Siemens Airport experience worldwide.
... and what we do

Airports of modern age experience a drastic growth in air traffic resulting in a large increase of cargo volume.

International standards are also continuously increasing. To cope with this situation is an ambitious goal for airports, airlines and authorities.

Siemens Dematic AG supplies a wide range of products designed to meet the requirements of our customers. We concentrate our efforts to provide equipment and services in and around the cargo terminal.

We do not only develop new products for cargo terminals, we also make sure that the highest standards apply to our manufacturing. We look after application of state-of-the-art computer systems for process and information handling as well as for data interchange with other cargo terminals, forwarders and airlines around the world.
# Customer Logistics Analysis

Collection of data and information to be processed for a cargo terminal

## DESIGN DATA

<table>
<thead>
<tr>
<th>Data acquisition</th>
<th>Peak month</th>
</tr>
</thead>
<tbody>
<tr>
<td>● AWB data</td>
<td>Peak week</td>
</tr>
<tr>
<td>● Flight schedule</td>
<td>Peak day</td>
</tr>
<tr>
<td>● Booking</td>
<td>Peak hour</td>
</tr>
</tbody>
</table>

| Pre-pack operation                   | Tonnes of cargo handled per year |
| Trans-shipments                      | Number of airlines handled |

| Perishable freight                   | Aircraft parking positions |
| Cooling/freezing capabilities        | Direct nose or side loading of aircraft |
| Special storage                      | Freight forwarder facilities |
| Oversize storage                     | Growth rate |

---

### Report

- Collection of data and information for cargo terminal analysis.
- Data acquisition:
  - AWB data
  - Flight schedule
  - Booking
- Peak month:
  - Peak week
  - Peak day
  - Peak hour
- Pre-pack operation:
- Trans-shipments:
- Perishable freight:
- Cooling/freezing capabilities:
- Special storage:
- Oversize storage:
Solutions and Concepts
Our capabilities at Siemens Dematic AG are the result of long-term active involvement in the field of airport logistics. This experience – together with our global engagement – enables us to satisfy all international standards and regulations (IATA, DIN, ASTM, ISO, IEC, etc.).

Know-how is consequently transferred between our Engineering and Design Groups. Our worldwide knowledge is made available for each single project, thus ensuring all advantages for our customers.

We continuously improve our performance by using the latest software and hardware tools for Engineering, Design, Simulation and Project Management.
Control Capabilities

Integrated control and information technology ensures that any degree of automation can be achieved depending on customer requirements. We provide the appropriate hard- and software solution which guarantees fault-free tracking of the cargo at any point of the material flow process.

Export acceptance

**Process:**
- Tour planning
- Truck dock management
- Identifying and weighing cargo upon arrival

**Equipment:**
- Truck dock equipment

**Material Flow:**
- Unloading truck
- Weighing shipments
- Storing shipment in boxes

Import delivery, pick-up of shipment

**Process:**
- Tour planning
- Truck dock management
- In-time retrieval of cargo to truck dock

**Equipment:**
- Truck dock equipment

**Material Flow:**
- Transportation of boxes to truck dock
- Unloading of boxes
- Loading of truck

Loading advice for flight

**Process:**
- Planning of build-up (selecting workstations for flight, build-up/emptying of ULD's/AWB's for ULD loading)
- Directing empty ULD's/boxes to workstations
- Labeling, weighing and storing of built-up ULD's

**Equipment:**
- Workstations, scales, label printers, scanners, RF terminals, ETV's, TV's, AEM

**Material Flow:**
- Build-up of ULD's
Flight arrival

**Process:**
- Accept ULD’s for storage
- Breakdown planning
- Retrieve ULD’s to workstations
- Identify shipment at breakdown
- Restore empty ULD’s.
- Reconciliation of flight manifest

**Equipment:**
- TV, ETV, workstation, terminal, RF terminal, conveyor, ULD storage

**Material Flow:**
- Breakdown ULD’s

Shipments at breakdown area

**Process:**
- Finding appropriate storage location
- Directing boxes to their destination
- Tracking transportation of boxes

**Equipment:**
- AEM, BSS, S/R machine, conveyor

**Material Flow:**
- Store boxes for import

Retrieval of Cargo

**Process:**
- Preparing aircraft loading sequence
- Retrieving ULD’s for aprons
- Handling offload

**Equipment:**
- ETV’s, interface conveyors, dolly trains

**Material Flow:**
- Moving ULD’s to staging area for aircraft loading
- Loading aircraft
Pre-Pack Truck Loading

Efficient ramp handling at landside is essential for a cost-effective cargo handling operation. A strong increase in prepacked air cargo demands efficient and safe facilities.

Siemens Dematic offers a wide range of truck dock systems ranging from stationary dock lifts to complex movable machines with on-board weighing equipment and ULD contour checking devices.
Truck dock vehicle

Truck dock vehicle

Truck dock vehicle

Truck dock vehicle

Truck dock vehicle
Siemens Dematic pays maximum attention to safety at Build-up and Breakdown areas and to all aspects of man-machine interface (MMI).

Our design takes in account safety measures such as working heights and provides safety skirts at all necessary positions, i.e. decks are equipped with walkways.

However, advanced air cargo facilities additionally demand higher degrees of automation.

Today usually ETV's TV's etc. are operated by computer systems without any human intervention. This ensures a decrease of risks for the operators while increasing operational performance.
Drive-over conveyor

Workstation transfer vehicle

Transfer vehicle with turntable
Our product range provides conveying elements such as roller desks, right-angle desks and turntables.

In applications where floor space and operational areas need to be maximised, special roller conveyors with drive-over capabilities are available.

Reliable and robust powered conveyors are the backbone of any cargo handling system.

Different types of air cargo require different treatment. Cooler rooms, freezer facilities, perishable centres; any cargo centre we have built had special requirements. Together with consultants, architects and operators we find the solution for the needs of our customers: from manual operation to fully automated solutions, from definition of the building interface to the operational requirements – our experience works to your advantage.
A wide range of ETVs, CSS-Stacker cranes and BSS-Stacker cranes from our standard product range are available to solve any storage requirements.

Storage and retrieval equipment is a very essential part of a cargo handling system – designed to operate 24 hours per day and 365 days per year. With our selection of components and structural design we achieve optimum availability and reliability of our equipment.

From manual operation through semi-automatic mode up to full automated unmanned operation – we provide the control systems to maximise the efficiency of your operation. We are a pioneer in the field of fully automated systems and apply latest technologies such as optical positioning systems or frequency-controlled AC-drives.

Whether half-size units, 10 ft or 20 ft ULD’s, empty or fully loaded containers and pallets are handled: Siemens Dematic has developed the appropriate equipment in close liaison with terminal operators, airlines and consultants.

With the experience of over 1,000 installations we have the capacity to give you a fully integrated solution – all equipment from a single source.
Mail Handling

Sortation of mail trays, tubs, sacks and parcels, within strict flight deadlines, requires every process be done quickly and with great accuracy. Our total system solutions integrate proven cargo handling equipment with high speed sortation technologies. We carry a complete line of transport and sortation conveyors including crossbelt and tilt tray sorters, chute technologies, controls and software.

As a leader in technologies integration, Siemens Dematic has the experience and technologies you need for a total mail system solution.

The tilt tray sorter provides economical sortation for packages, mail pouches and assorted containers from 1 to 110 pounds. Items are transferred from infeed conveyors onto moving trays. At the appropriate divert point, the trays tilt to gently discharge items onto chutes or take-away conveyors.

The crossbelt sorter provides performance features unmatched by other sortation technologies. The powered belt conveyor on each carrier provides positive off-loading of each item resulting in faster sort rates and closer, more concentrated divert points. This means more chutes can be concentrated in a small space-reducing the overall footprint of the system.
Locations to Serve You

**Americas**

**Siemens Dematic**
Rapistan Material Handling Automation Division
507 Plymouth Avenue NE
Grand Rapids, Michigan 49505
USA
Telephone: +1-616-913-7700
Fax: +1-616-913-7701
Internet: rapistan.com
Email: info@rapistan.com

**Brazil**
Sao Paulo

**Canada**
Montreal
Toronto

**Mexico**
Mexico City

**United States**
AZ, Phoenix
CA, Los Angeles
CA, San Francisco
CO, Denver
FL, Orlando
GA, Atlanta
IL, Chicago
IN, Indianapolis
KS, Kansas City
MA, Boston
MI, Detroit
MN, St. Paul
MO, St. Louis
NC, Charlotte
NJ, Newark
NY, Rochester
OH, Cincinnati
OH, Cleveland
TN, Nashville
TX, Dallas
WA, Seattle
WI, Milwaukee

**Europe**

**Siemens Dematic**
Material Handling Automation Division
Carl-Legien-Strasse 15
D-63073 Offenbach/M.
Germany
Telephone: +49-69-89 03 13 59
Fax: +49-69-89 03 18 40
Internet: siemensdematic.com

**Austria**
Salzburg

**France**
Paris

**Germany**
Augsburg
Dusseldorf (Wetter)
Frankfurt (Offenbach)
Hannover
Leipzig
Nuremberg
Rosenheim
Stuttgart

**Italy**
Milan

**Portugal**
Lisbon

**Spain**
Barcelona
Madrid

**Switzerland**
Zurich

**United Kingdom**
Banbury
Manchester

**Asia Pacific**

**Siemens Dematic**
Material Handling Automation Division
24 Narabang Way
Belrose NSW 2085
Australia
Telephone: +61-2-9486-5555
Fax: +61-2-9486-5599
Internet: siemensdematic.com.au
Email: marketing@siemensdematic.com.au

**Australia**
Adelaide
Brisbane
Melbourne
Sydney

**China**
Beijing
Shanghai
Shenzhen

**Indonesia**
Jakarta

**Malaysia**
Kuala Lumpur

**New Zealand**
Auckland

**Philippines**
Manilla

**Singapore**
Singapore

**Taiwan**
Taipei

**Thailand**
Bangkok