Green and efficient airports
1. The Cargo Process

2. Product Portfolio

3. Cargo Security Systems

4. References

5. Innovations
World Cargo Routing Strategies demand for an efficient Ground Handling Process

Freight Handling according to the requirements of the goods.

(1) Originating Freight:
  Pre-pack, Special Handling,
  BU Intact ULD to (3) and for BD&BU to & via (2).

(2) Transfer Freight:
  Transfer Intact ULD and B&B,
  Terminating & Originating in (2),
  Pre-pack to/from (2), Special Handling

(3) Terminating Freight:
  Pre-pack, BD, Special Handling
The Cargo Handling Process and Network of Business Partners

1. Route & Freight Planning
2. Business Model: In-Outbound
3. Freight Operation: Land-Airside
4. System Administration: Interfaces, Tracking & Tracing

- Airlines/Airports
- Forwarder/3PL
- Transport Agents
- Shipper / Consignee
The Air Cargo Industry of the Future …

… Demands for:

- High Performance Systems
- Integrated Turnkey Solutions
- Process Oriented Solutions
- ROI Driven Investment

… to Serve World-Wide Cargo Networks
The Typical Cargo Functional Modules

- Truck Dock Station
- ULD Storage Rack
- Bulk Cargo Storage
- Weight Scale
- Workstation Area
- Airside Interface/Dolly Dock
- Special Function e.g. Perishable
- Empty ULD Storage
- ULD Storage
- ULD Transport
... and the Process Management
The Key Functions:
Export-, Import- and Transfer Operation
State of the Art Terminals require Innovative Technologies

- Innovative Planning & Simulation
- High Speed Storage (120 m/min)
- High Speed Hoist (60 m/min)
- Intelligent Management Systems
- Security & Maintenance Solutions

Airport Types

- 1) Hub-Terminal
- 2) International
- 3) National
- 4 & 5) Regional

Terminal Complexity

kTonnes / Year

Istanbul /80
Macau /220
PEK /660
Dubai /2
PVG /2.4
HKG /3.6
## Air Cargo Excellence since 40 Years

### History
- Product development since 1969
- Over 80 systems installed

### Milestone Projects

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>First Cargo equipment for Lufthansa in London</td>
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<tr>
<td>1977</td>
<td>First Cargo System for Luxair in Luxemburg</td>
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<tr>
<td>1991</td>
<td>Hong Kong T2, first fully automated system</td>
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<tr>
<td>1998</td>
<td>Kuala Lumpur, MAS, fully integrated operation</td>
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<tr>
<td>1994</td>
<td>Tianjin, first Siemens Cargo System in PRC</td>
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<tr>
<td>1998</td>
<td>Hong Kong ST1, world largest cargo terminal</td>
</tr>
<tr>
<td>1998</td>
<td>BCIA first Siemens cargo terminal for PEK</td>
</tr>
<tr>
<td>1999</td>
<td>CEA Shanghai, first automatic System in China</td>
</tr>
<tr>
<td>2003</td>
<td>Peking, Air China, first 20ft stacker</td>
</tr>
<tr>
<td>2005</td>
<td>Taipei, Far Glory</td>
</tr>
<tr>
<td>2007</td>
<td>Dubai, Cargo Mega Terminal</td>
</tr>
<tr>
<td>2008</td>
<td>Abu Dhabi, Vatry, CX, TACT</td>
</tr>
<tr>
<td>2009</td>
<td>Vietnam, India, China, Taiwan</td>
</tr>
<tr>
<td>2010</td>
<td>Great Britain, USA</td>
</tr>
</tbody>
</table>
We Provide the Complete Circle …
… from Planning to Operation

Integrating the Processes is the Key to Ultimate Success and Operation Excellence!

Planning
- Demand Analysis
- Actual and Target
- Scenarios
- Simulations Solution Optimization

Concepting
- System Layouts
- Control Concepts
- Cost Estimating
- Quotation

Implementation
- Simultaneous Engineering
- Procurement, Manufacturing
- Site Assembly, Commissioning
- Local Contents

Integration
- Operational Support
- External Supplies
- Instruction, Training
- Maintenance, Service

Transportlogistik 2011 - Air Cargo Europe
Integrated Hardware & Software –
The Portfolio for Todays and Future Markets

**Classic Cargo Product Portfolio**

- **Mobile Equipment**
  - ETV, CSS Stacker, AS/RS
  - TV, Moving-/Truck docks

- **Stationary Equipment**
  - ULD Storage Systems
  - Roller-, RA-Decks/Turntables
  - Workstations
  - Cooler rooms, Scales, etc.
  - BSS and Mini shipment Systems

- **PLC & IT**
  - L1 & 2: PLC Controls Systems
  - L 3: Cargo Compact IT System

- **Process Packages**
  - Security and Simulation Chambers
  - Service and Maintenance Tools

**Developments: current and future**

- **New Products**
  - 508 Stacker ETV & shuttle TV
  - Optimized ULD Storage & Hoist
  - ULD for Parcel product-line
  - New drive over workstations

- **Future Product planning**
  - Revolver & Storage Systems
  - Multi TV, Manual ULD mover
  - Reversed ETV

- **New PLC & IT Modules**
  - IT/PLC Standard Modules & Tools
  - IT light version

- **Future Cargo Market Solutions**
  - Intermodale Traffic (Rail/Air)
  - Security solutions (EDS, Screening)
  - 3PL integration
Cargo Logistics

Complete integrated cargo handling solutions

Landside arrival/dispatch

Transportation

Storage

Workstation area

Airside arrival/dispatch

IT solutions
Security Systems for 100% Cargo Safety

ULD XRay Screening
Hong Kong, HACTL –
The Worlds Largest Cargo Terminal

Pre-Pack & Express  Super Terminal 1  Air Mail Centre
Highlights of the Cargo Solution for HACTL ST1 in Hong Kong

Key Advantages:

- Short distances via multi-level operation
- Vertical integration via hoists & CSS
- Reduced ground requirement
- Increased operation surface via Inner Airside Road
- Reduced manpower via fully automation
- Integrated IT Management
Kuala Lumpur, MAS Cargo –
The Integrated Cargo Terminal
Taiwan, Taipei Far Glory – The Newest State of the Art Air Cargo Terminal

- Handling capacity
  500,000 Tonnes/year
  CSS system + BSS

- The system includes
  70 Workstation, 3 Transfer Vehicles,
  7 ASRM.
  The scope of supply comprises designate supply.

- The system will be built in
  2 sections from 2004 to 2007.
  The first phase did go into operation
  December 2005

Multi-Level Storage & Operation for Efficiency under One Roof

(Click for video)
Dubai International Airport Expansion Phase II – The Cargo Mega Terminal of the Future

Key Features:

- 70% Transshipments
- Totally Enclosed & A/C
- Multi-Level
- Fully Automated Process
- Semiautomated Manual Workstations
Cathay Pacific Cargo Terminal
Perspective from South
KHH Airport & TACT
Market Demand and Outlook

- Reduced Engineering via Design Tools for fast integration
- High End Solutions for Hubs and Complex Airports
- Low Budget Solutions for Small & Mid Size Airports
- Cargo Tracking Solutions and more Interfaces (Pre-pack)
- Standardized PLC/IT Solutions for efficient integration
- RFID – Technology for Advanced Cargo Tracking
- Increasing Security demand (Security Gates, EDS, Screening)
- Increasing 3PL and courier market and shorter turnaround
- Shorter ROI and demand for new Financing Models/Operate Lease.
Thank you for your attention!