Efficient management of container, break-bulk, Ro-Ro terminals and warehouses using information technologies

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Who we are:
SOLVO – one of the leading providers of high-end supply chain execution solutions to help optimize port, terminal and warehouse logistics.

Years active:
20

Number of employees:
145

Number of completed projects:
207 (end of 2015)

Among customers:
Developed first WMS and TOS in the Pos-Soviet space in the 1990s

70% of all container in Russia is processed by Solvo.TOS

Solutions for container, break-bulk, Ro-Ro and multi-purpose

International certification

20 years
200+ projects
50+ worldwide partners

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The system determines an appropriate container stack based on stacking rules and guides a CHE operator to place the container accordingly. E.g., all Maersk containers are moved for storage to the second stack, while all CMA CGM containers go to the third stack.
The specific location in a stack is chosen by the system in accordance with stacking strategies. For example, unoccupied locations at the lowest tier are taken first.
A reduction in the amount of moves is achieved thanks to:

- Address-based storage at the yard
- Dynamic stacking rules and strategies.
- Forecasting of container arrival/departure
- Housekeeping instructions

Number of rehandles reduces on average by 25%
The container terminal layout can be viewed and managed in real time using a built-in interactive layout viewer and editor allowing to:

- Fully describe the multilevel topology: establish a tree of terminal location, group and zone occupancy
- Display, edit the position of terminal objects
- Monitor the actual level of terminal occupancy in real time
- Monitor worker movements in the terminal in real time
- Find various objects in the terminal layout and much more
The system analyzes the available data about the road network of the terminal and builds the optimal route for a CHE; The entry of road data is carried out through the roads editor function - part of the Real-time terminal layout viewer and editor; The user defines the key check-points, permitted turns and delays. The user can also then set the availability of a stack for processing from a selected road.
Berth planning

Based on the monthly vessel schedule planners can schedule berth working times and the system automatically distributes vessels across different berths based on ETA, vessel type, cargo, bert parameters, etc.
Forwarder send an EDI message to the terminal operator which is automatically processed by TOS. E.G COPARN - transport order booking. The message contains preliminary info about the arriving containers and vehicles.
Integrated load/discharge planning applications
Resource planning

Day-shift planning → Shifts → Work-orders → Resource allocation and control
Workstations for CHE operators
Increased productivity for STS: 5%
The remote access allows to grant remote access to the System via the Internet (or local terminal network) e.g. for viewing reference information about terminal operations/orders/vessel calls, etc. and is available to the shipping line agents and forwarders.
Gate optimization

11:52

- **Processing**
  - Time slot: 11:00 - 13:00
  - Status: Processing
  - Plate number: B088PKG8
  - Window: 2
  - Status: Processing
  - Plate number: B351PT178
  - Window: 3
  - Status: Invitation

- **Standby**
  - Plate number: B782OK178
  - Duration: 4 min.
  - Plate number: B638BO178
  - Duration: 28 min.
  - Plate number: K490HT190
  - Duration: 4 min.
  - Plate number: A844CO35
  - Duration: 32 min.
  - Plate number: B960MM168
  - Duration: 8 min.
  - Plate number: Y027CP78
  - Duration: 32 min.
  - Plate number: H780PP178
  - Duration: 8 min.
  - Plate number: B457TP96
  - Duration: 36 min.
  - Plate number: M597MC178
  - Duration: 12 min.
  - Plate number: D072EO187
  - Duration: 36 min.
  - Plate number: T0762Y47
  - Duration: 12 min.
  - Plate number: O532PT178
  - Duration: 40 min.
  - Plate number: K499RT117
  - Duration: 12 min.
  - Plate number: Y070KE76
  - Duration: 36 min.
  - Plate number: B070OE178
  - Duration: 12 min.
  - Plate number: H306TC178
  - Duration: 32 min.
  - Plate number: B088PB178
  - Duration: 40 min.
  - Plate number: B156CB178
  - Duration: 40 min.

- **Entry**
- **Exit**

- **7%** Reduction of rehandles
- **30%** Truck turnaround time is reduced

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Automated identification: containers
Automated identification: break-bulk and Ro-Ro
Automated identification: Ro-Ro

- RDT
- Paper

When receiving a tally indicates a load, zone, gang and slot. Vin-number ID is available for Ro-Ro and new automobiles.
Container Weighing

Weighing management

Automated container delivery

Weighing registration

Creation of weighing documents
TOS disables vessel container loading without VGM

Solvo.TOS blocks delivery and loading of container onto the vessel without VGM data
### WMS features

- Real-time load registration and monitoring
- Automated receiving
- Guided putaway
- Storage optimization and warehouse layout visualization tools
- Inventory control
- Advanced replenishment and order picking technologies
- Lot traceability
“Smart shelves” or racks equipped with RFID antennas.

- Racks are made from a special dielectric material to shield from radio signals.
- Smart shelf technology makes it possible to automatically record staging and load grabbing events in the WMS, while freeing up the hands of the operator.
KPI dashboards
The smarter alternative
www.solvosys.com
Our stand: #14

Thank you for your attention!