

Effective solutions for automating the Vessel and Railway operations of container terminals within a single IT ecosystem

Giovanni Migliaccio, Vice President Sales & Marketing



Who we are:

Europe B.V

SOLVO is an international leading vendor of TOS, WMS and YMS solutions and systems integrator on the global markets.

We are a leading provider of high-end supply chain solutions to help and optimize the logistics and all cargo handling.



Our approach:

Not just development and implementation. We have the largest expertise in automating storage logistics and are ready to work on a turnkey basis, taking risks. We are a leading firm in providing quality and value to our customer.

Ready for new challenges. We take on the most complex and specific projects that are beyond the power of others.

Work for result. Any project that we carry out, we bring to the end.



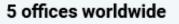


26 years experience



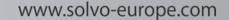
24/7/365 support







400+ projects



Business core areas





Solutions for ports and terminals

A leading Terminal Operating System for ports and terminals. An ultimate set of solutions for managing just any type of cargo: container, break bulk, Ro-Ro, general cargo, etc., including extra solutions as the VBS, AGMS, VGM.



Solutions for managing yard

YMS helps to manage all the operations at the yards, including allocation and storage of different types of cargo, housekeeping, reefer and empty containers management, CFS management etc. Providing procurement of gateentry/cargo pick-up permits for truckdrivers, trucks and cargo forwarders/transport companies.



Solutions for warehouse logistics

One of the leading software providers of SCE software. Solutions range from WMS to WCS, Yard, Billing, KPI and more for all verticals: production, retail and distribution, 3PL and pharmaceuticals.

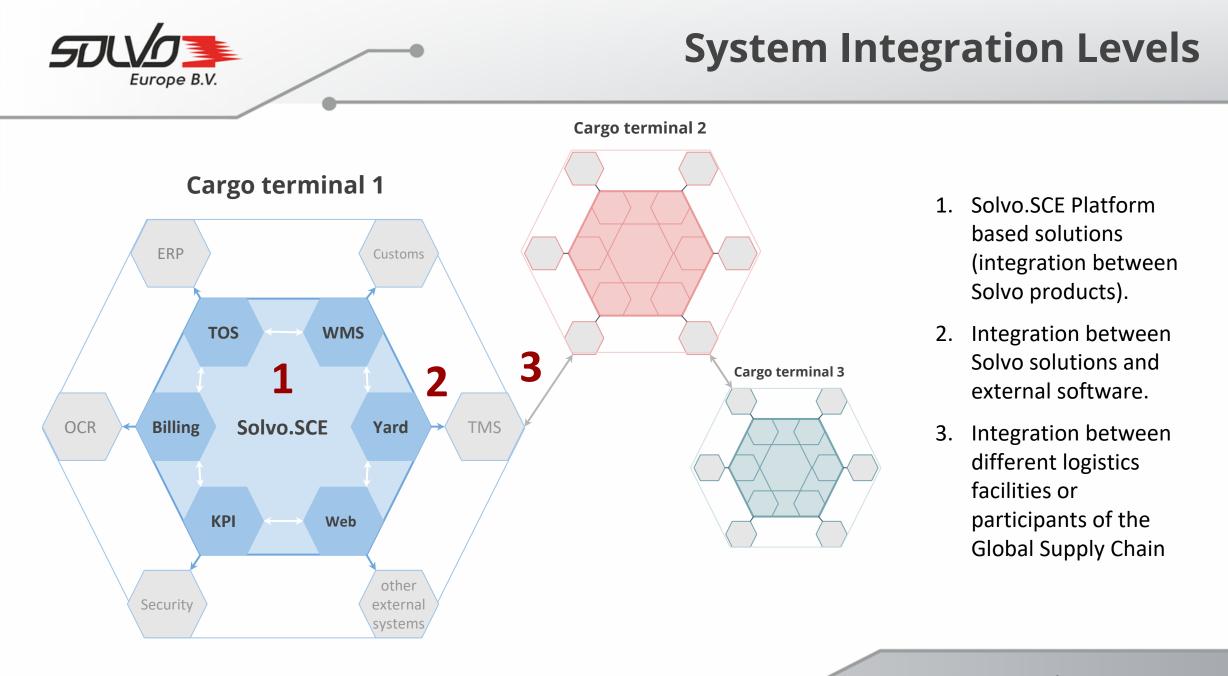


Consultancy in logistics and system integration

Logistics and Management consultants, including specializations for Project Management, Optimization, Engineering, Design and Procurement.

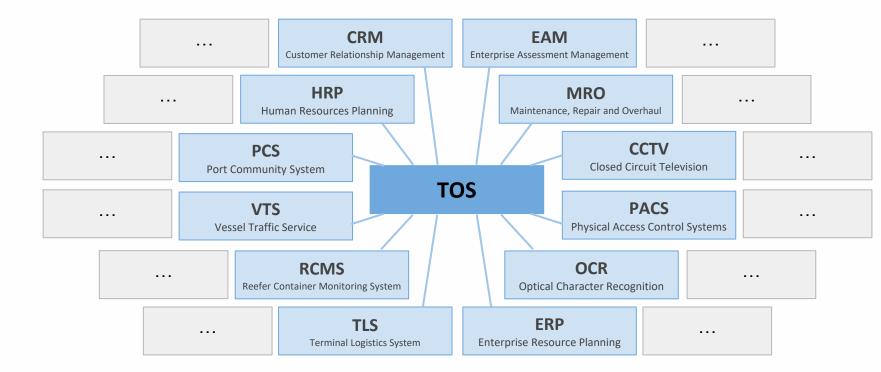
As well as training, seminars, webinars and other educational events.



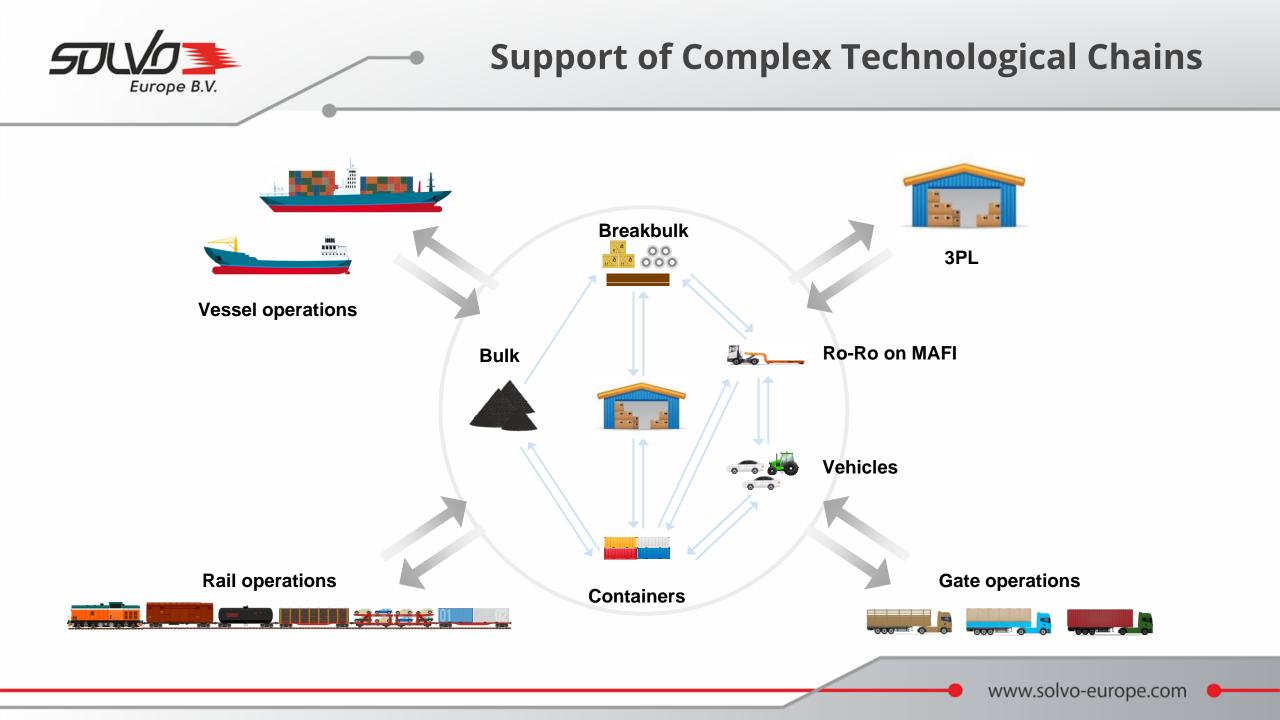




Solvo.TOS Integration Opportunities

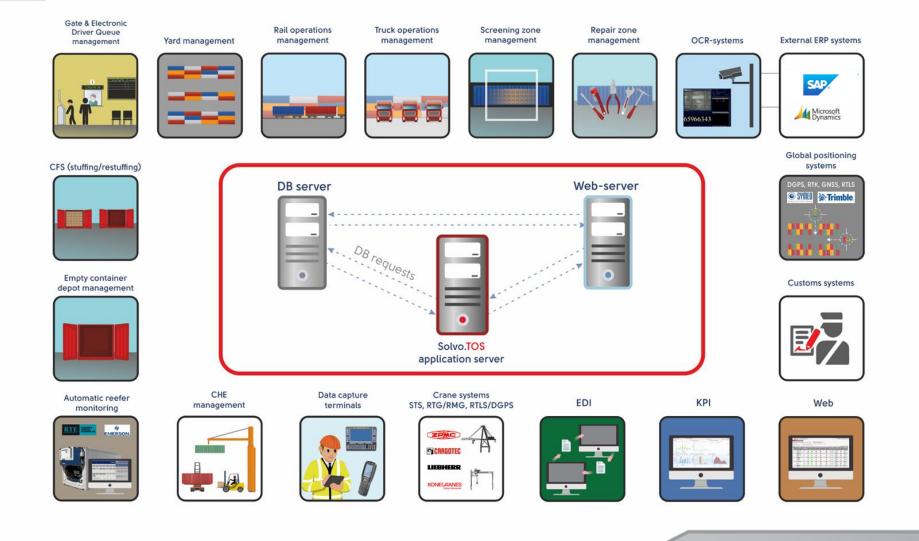


Solvo.API (Application Programming Interface) is devided into two modules: EDI (Electronic Data Interchange) for receiving and transformation data from external information systems and Notifier for preparing messages in the required format for external information systems when certain events occur. System receives a document with a message from the port system – integration platform - transfer it to the EDI module in various formats, which are then converted into the format required for the Solvo.TOS database. As a result, the user receives all this information online.



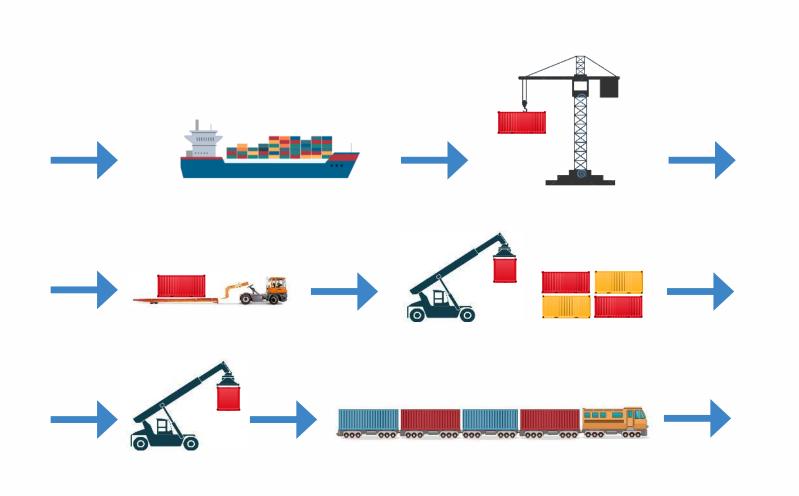


Solvo.TOS overview





History of container handling operations



Container History Settings		
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peration time Type	Description	
24.02.22 15:26 new_cnt_change	M A changed param. "weighing requirements" of cont. ACLU010040 from "No" to "Yes"	
24.02.22 15:26 work_create	M A created job 1458386 type: Weighing' with status 'Ready' for transfer container ACLU0100040 from MARLEEG to BL1 putaway rule # - routing rule # 31	
24.02.22 15:31 new_cnt_change	RS Driver D T O changed param, "status" of cont. ACLUG100040 from "Available" to "On loader"	
24.02.22 15:31 new_cnt_change	RS Driver D T O changed param, "slot" of cont. ACLU0100040 from "MAFILEEG" to "RS TORS"	
24.02.22 15:31 update_status_work_cnt	RS Driver D T O changed 1456886 Weighing status to 'Processing' for transfer container ACLU0160040 from MAFLEEG to BL1	
24.02.22 15:31 new_cnt_change	RS Driver D T D changed param: "status" of cont. ACLU0100043 from "On leader" to "Available"	
24.02.22 15:31 new_ont_change	RS Driver D T O changed puram. "slot" of cont. ACLU0100040 from "RS TORS" to "BL1"	
24.02.22 15:31 update_status_work_cnt	RS Driver D T O changed 1458386 'Weighing' status to 'Processing' for transfer container ACLU0100040 from MAFLEEG to BL1	
24.02.22 (5:3) update_status_work_ont	RS Driver D T O changed 1458385 'Weighing' status to 'Done' for transfer container ACLU0100040 from MARLEEG to BL1	
24,02,22,15:31 cmt_maxw	RS Driver D T-D on RS TORS moved ACLU0100040 from MARILEEG1 to BL1:1 to job 1458386	
24.02.22 15:31 new_cnt_change	RS Driver D T D changed param. 'wgt' of cont. ACLU0100340 from '70030.0' to '1800.0'	
24.02.22 15:31 new cnt change	RS Driver D T D changed param. "weighing requirements" of cont. ACLU0100040 from "Vet" to "No"	
24.02.22 15:31 work create	RS Driver D T D created job 1456399 type: Weighing' with status: Ready' for transfer container ACL/00100040 from BL1 to NOTDEFINED putaway rule # 1 routing rule # -1	
4.02.22 15:31 update status work ont	CTMS changed 1453389 Weighing' status to "Reserved" for transfer container ACLUD100340 from 8L1 to NOTDOFINED	
24.02.22 15:31 new_cnt_change	RS Driver D T O changed param. "status" of cont. ACU/0700040 from "Available" to "On loader"	
24,02,22 15:31 new_cnt_change	RS Driver 0 T O changed param, "slot" of cont, ACLU0100000 from "BL1" to "RS 10RS"	
24.02.22 15:31 update_status_work_cnt	RS Driver D T O changed 1458389: Weighing: status to 'Processing' for transfer container ACLU0100040 from 8L1 to NOTDEFINED	
24/02.22 15/32 new_cnt_change	RS Driver D T D changed param. "status" of cont. ACLU0100040 from "On loader" to "Available"	
24,02,22 15:32 new_cnt_change	RS Driver D T O changed param. 'tier' of cont. ACLU0100040 from "1" to "2"	
24,02.22 15:32 new_cnt_change	RS Driver D T O changed param. 'stat' of cont. ACUU0100040 from "RS TORS" to "AA01-2-7"	
24.02.22 15:32 update_status_work_ont	RS Driver D T O changed 1458389 "Weighing" status to 'Done' for transfer container ACLU0100040 from BL1 to A401-2-7	
24.02.22 15:32 cmt_move	RS Driver D T O on RS TORS moved ACLU0100040 from BL1:1 to AA01-2-72 to lob 1458389	

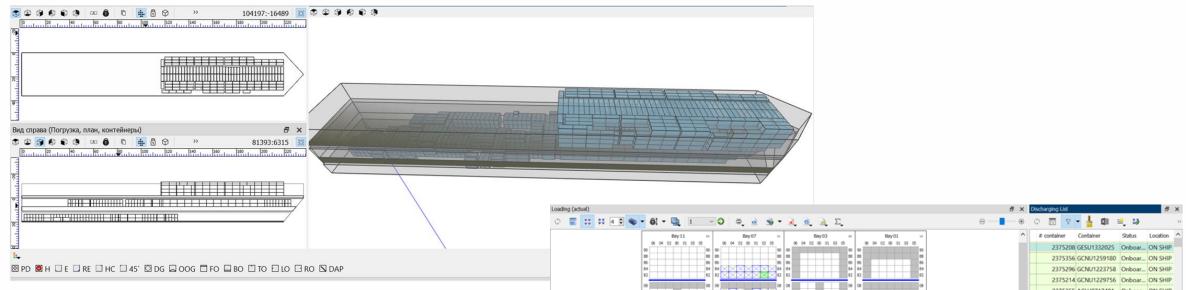
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	Onhand date		Departure date	21.03.22 16:44		
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	Forwarder		Agent	A		
	Ownership type	Line	Delivery forwarder			
	Cargo description	A				

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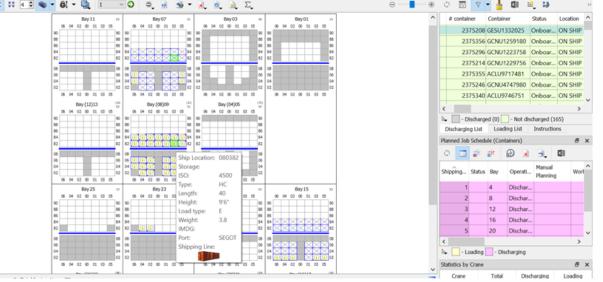
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Advanced Vessel planning capabilities

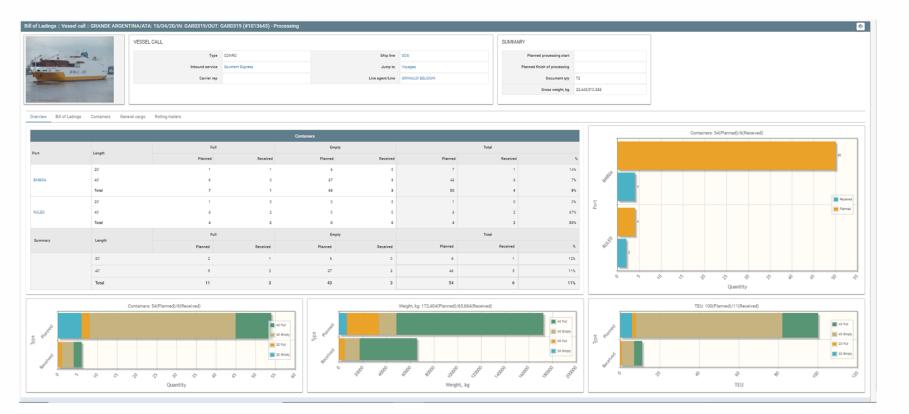


The system has a wide range of options for planning vessel arrivals. With the help of tools such as the Cargo Planner and the Universal Vessel Planner it is possible to plan the loading and unloading of containers in the required order, taking into account the container characteristics and specifications. Once at the terminal, the container is recorded in the system and all of its further movements are registered in the system.





Speeding up document flow processing



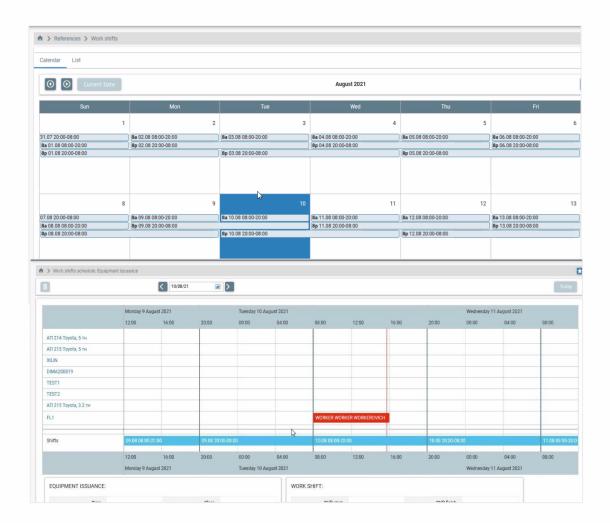
Information about the container is taken from documents uploaded in advance, such as bills of lading, bookings and service orders.

Further work on loading and unloading is based on the data obtained from these documents.

The system also allows to visualize statistical data and present them as graphs and charts.



Personnel & equipment productivity



The dispatcher controls the execution of the work-order using an interactive terminal map and data received in real time from radio terminals mounted on vehicles or held by tallymen.

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place the container in the specified location.

Supported types of equipment

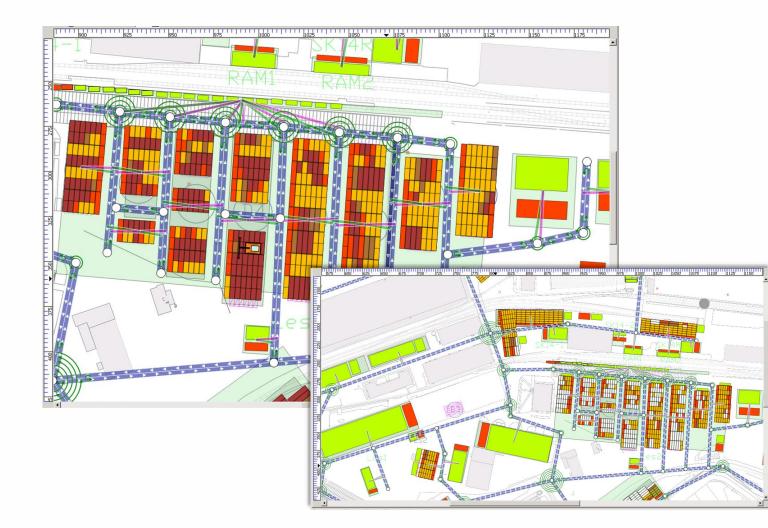
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CHE Accounting and assignment



- The system analyzes the available data about the road network of the terminal and builds the optimal route for a MHE;
- 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 checkpoints, permitted turns and delays.
- The user can also then set the availability of a stack for processing from a selected road.



Dynamic stacking based on rules and strategies in the yard

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The system finds a stack for the container based on putaway rules. For example, all MSC containers are to be placed in zone 1 of the yard storage area, while CMA containers go to the stacks in zone 2. The core technology that the system uses to manage operations is automated work order generation based on predefined rules and strategies. There are hundreds of strategies available in the system that may take into account thousands of parameters to make sure the putaway process for example is efficient and housekeeping is minimal.

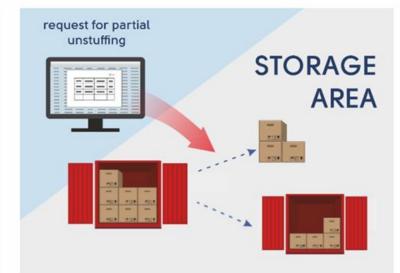




Stuffing and unstuffing



request for stuffing



Performed based on requests. Requests can be filed by clients via the web-portal or by service-desk operators. The system supports partial container and GC + Ro-Ro stuffing/unstuffing. Upon completion, the tallyman will register new seals via RDT and confirm job completion. The system will automatically create a stuffing/unstuffing certificate. Based on requests from clients the system can automatically create and distribute work orders for **partial unstuffing of containers**. Information about how much cargo needs to be unloaded from the container is entered in the comment field, the information is for reference.



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MFAR2906_3	A/MFAR	2906_3/10	150/150	Perfoming	-
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The system allows to handle special loads, such as paper reels. Such cargo can be stored at the terminal as general cargo, but containers are used for transportation.

For one of our customers we set up a customized stuffing and stripping procedure with the use of barcodes. So after receiving the request, the system automatically selects the right container for the procedure.

By using a barcode scanner, all information about the cargo packed in a certain container will be transmitted to the system and reflected in the history of container handling.



Improving cargo handling on the railroad

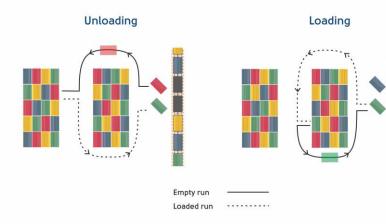
The system enables to automate:

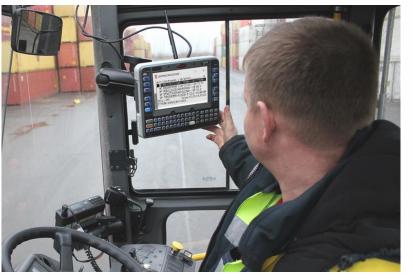
- 1. Planning of rail car staging.
- 2. Registration of rail consignment notes.
- 3. Registration of rail car arrival/departure.
- 4. Loading/discharging planning.
- 5. Train and cargo inspection.
- 6. Train loading and unloading.
- Automatic planning of rail car staging increases personnel productivity.
- Reduced number of errors when creating rail car plan.

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		2285 clause 3.2.2 p	ic.13 02020 B	01.10.2021 10:43:23 ERAKHMAN 01.10.2021	12:01:41 ERAKHMANOVA Acti	ve Modifie	d locally VSC/VSC-TOS/RwSpe	cDetail/2285	

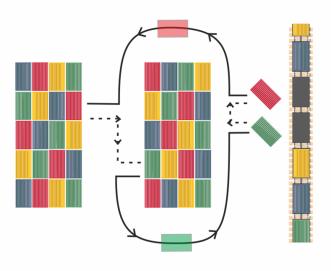


Dual cycling or optimization of pickup for loading/unloading





Dual cycling



Empty run ------





Tracking the History of Container Operations

♠ > Containers > GCNU1217591											1
Container :: GCNU1217591 (#2296141) - Gone										₽. Actions	10
	BASIC DA	TA									
		Number	er GCNU1217591		ISO code	22G1			Type D	DC	
		Length	a 20		Ownership type	Line		Line agent	/Line GI	GRIMALDI BELGIUM	
		Ship line	GDS		Forwarde	DEFAU	307	Direction	(cur) In	port	
		Direction (rcv)) Import		Empty			Cargo descri	ption		
		Commodity									
Overview Container data Processing Docur RECEIVING Vessel call GRANDE BRASILE/O		Intouts Container operations Care Received 17/01/19 00:00	Actual time of arrival	Worker	SHIPPING Train	visit GER/	Loaded	Actual time of depar		Worker 36406	
PARAMETERS							CURRENT LOCA	ATION			
Gross w	eight, kg 19	040.000		Cargo weight,	g 16720.000			Warehouse			
Haza	ard class			UN hazard cla	35			Location	OUT OF (77:10	
Sei	als (doc)	4343764		Seals (actu	I) WA343764			Last operation	25/01/19	16:04	
Conditi	ion Code DA	M		VGM,	9						



Implementation efficiency

Client services

Accelerated transport (truck, rail) processing at the terminal using preliminary data and time-slotting.

Enhanced customer-relationships with online, real-time data access.

Improved control with direct commands to vehicle-mounted radio data terminals.

Complete traceability with operator and CHE driver history logging.

Superior service quality for freight owners with up-to-date container information.

Operating costs

CHE optimization with predefined routes and proven stacking strategies.

Rational equipment labor utilization.

Elimination of unproductive moves, bottlenecks and decrease in empty runs and stowage errors.

Conservation of fuel and energy, reducing maintenance costs and increasing equipment lifespan.

Logistics

Streamlined and optimized mechanical processes involved in cargo flow at the terminal.

Complete control over cargo flow

Maximum space utilization, increasing from 5 to 20% (depending on area type).

Locate containers faster and with higher precision.

Optimized and pre-defined cargo stacking strategies to reduce reshuffles and costly moves.





Thank you for your attention!

