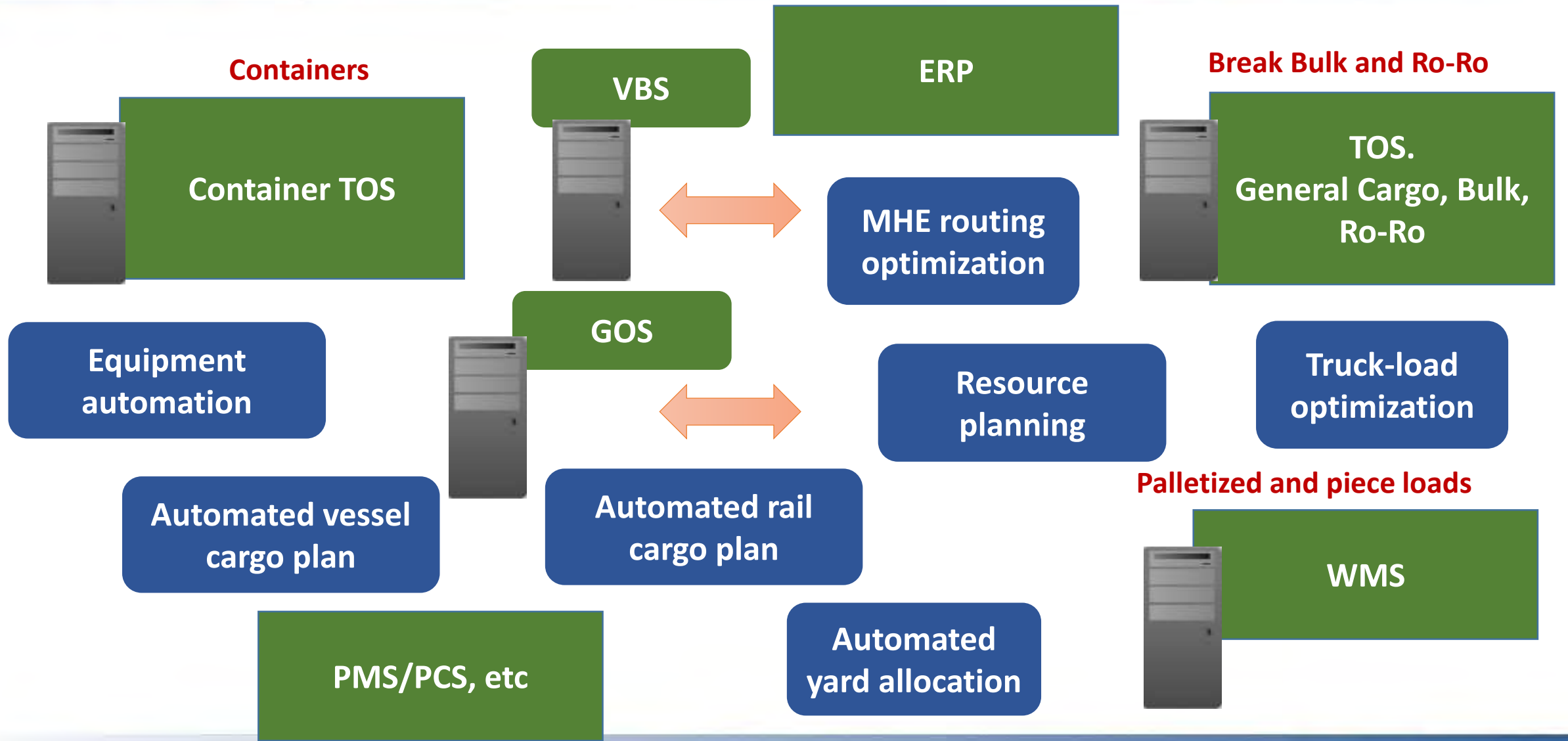


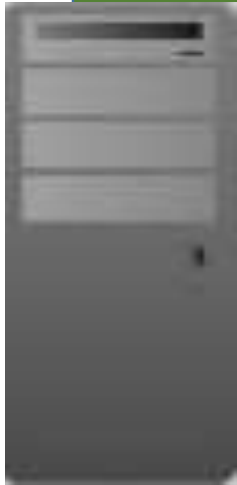


Cost-effective IT technologies for ports, terminals and warehouses for faster ROI

Dan Pershin, Director of Marketing, Solvo, St. Petersburg

- **Terminal automation** = challenge for CTs to handle fewer but very large calls
- Digital supply chain and collaboration
- Port-centric logistics
- Augmented reality
- Enhanced information security
- Hosting IT infrastructure in the cloud
- Artificial intelligence on steroids





Integrated VBS

Integrated
GOS

Yard optimization

Automated rail
cargo plan

Combined
container and
general cargo
yard
management

MHE routing
optimization

Integrated
resource planning

Automated vessel
cargo stowage
planning

Integrated terminal
automation

WMS-addon

Integrated billing

System implementation enables:

Increase cargo handling efficiency

Reduce empty runs of equipment

Increase personnel & equipment productivity

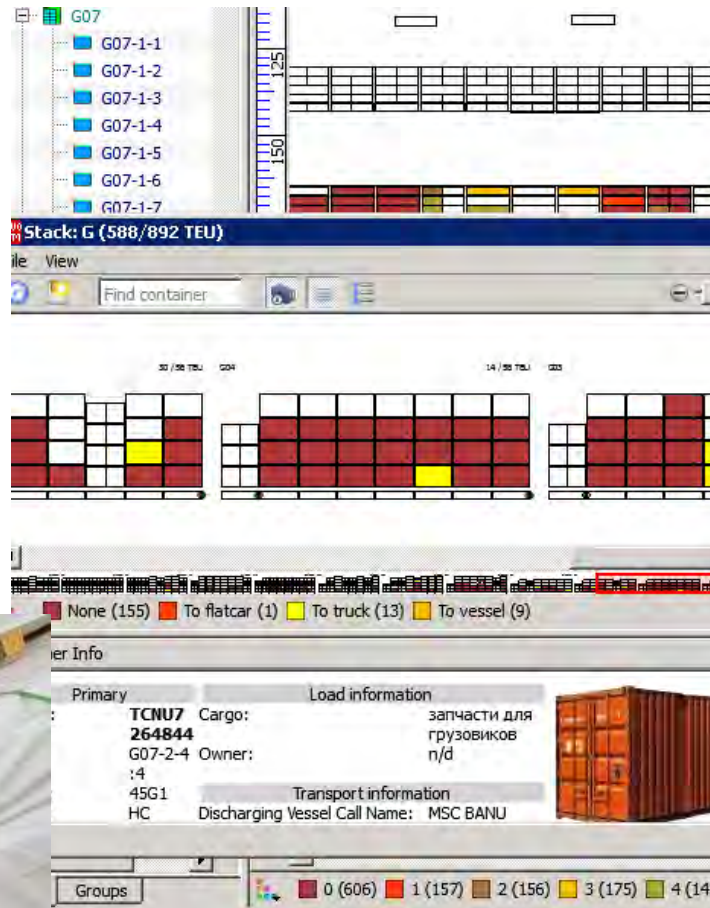
Standardize technological and business processes

Improve transparency of technological and commercial processes

Auto-ID and data collection



Address-based storage



Stack: G (588/892 TEU)

Find container

None (155) To flatcar (1) To truck (13) To vessel (9)

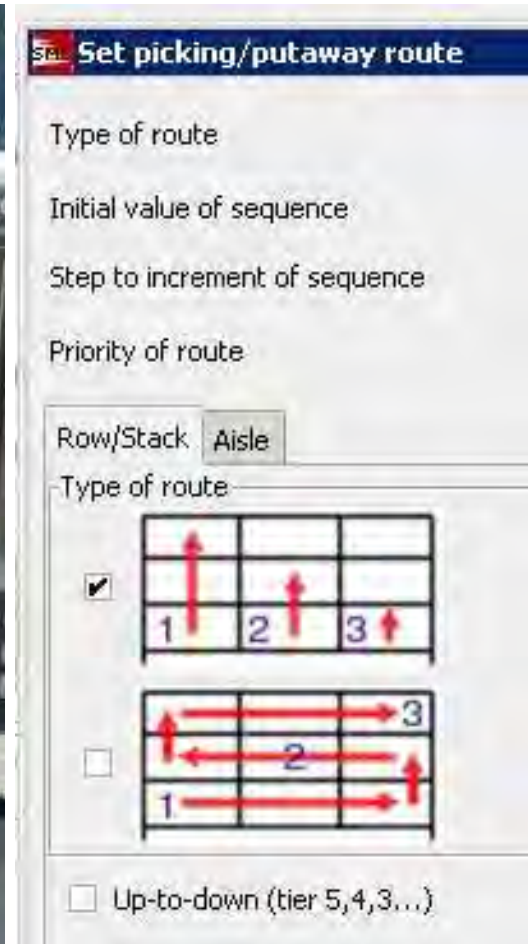
Primary	Cargo	Load information
TCNU7	264844	запчасти для грузовиков
G07-2-4	Owner:	n/d
45G1	Transport information	
HC	Discharging Vessel Call Name:	MSC BANU

Groups: 0 (606) 1 (157) 2 (156) 3 (175) 4 (142)

Remote management of labor



Business rules and strategies



Set picking/putaway route

Type of route

Initial value of sequence

Step to increment of sequence

Priority of route

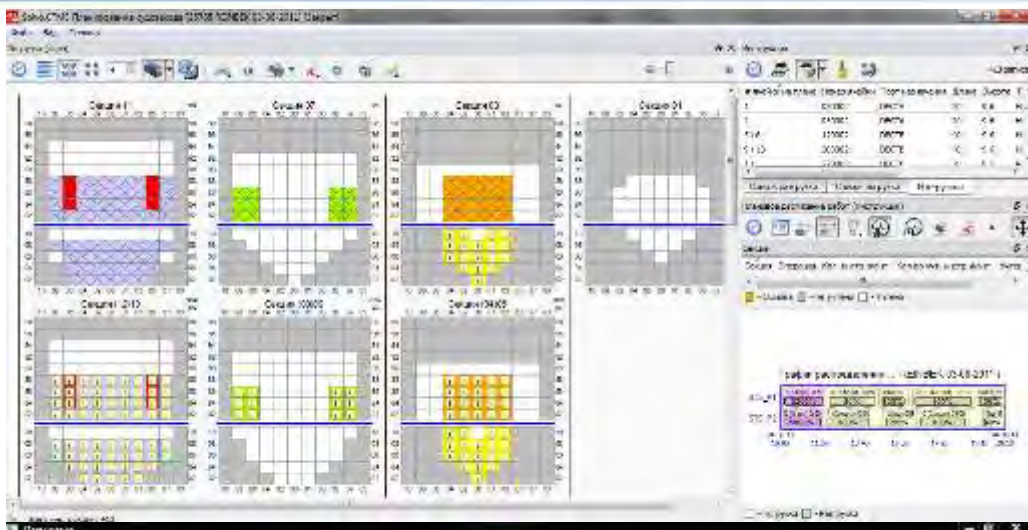
Row/Stack Aisle

Type of route

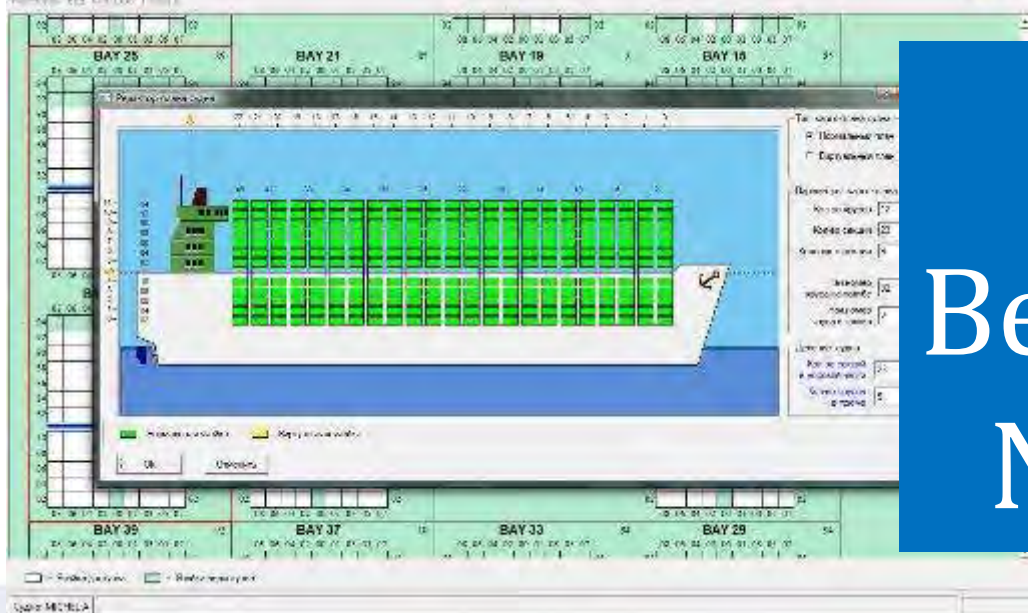
[Diagram: 3 vertical arrows in a 3x1 grid]

[Diagram: 3 horizontal arrows in a 1x3 grid]

Up-to-down (tier 5,4,3...)



- Automate load and discharge planning
- Automatically sequence cranes
- Reduce errors when creating and executing cargo plans
- Monitor vessel processing in real time
- Automate information exchange with agents
- Store entire vessel call and cargo plan history in one central location



Load and discharge
planning time
Before: 6 hours
Now: 15 min

Installed at the mounted terminal in the STS crane's cabin. Allows real-time confirmation of all container moves during loading discharging.

QC efficiency increased by **7%**



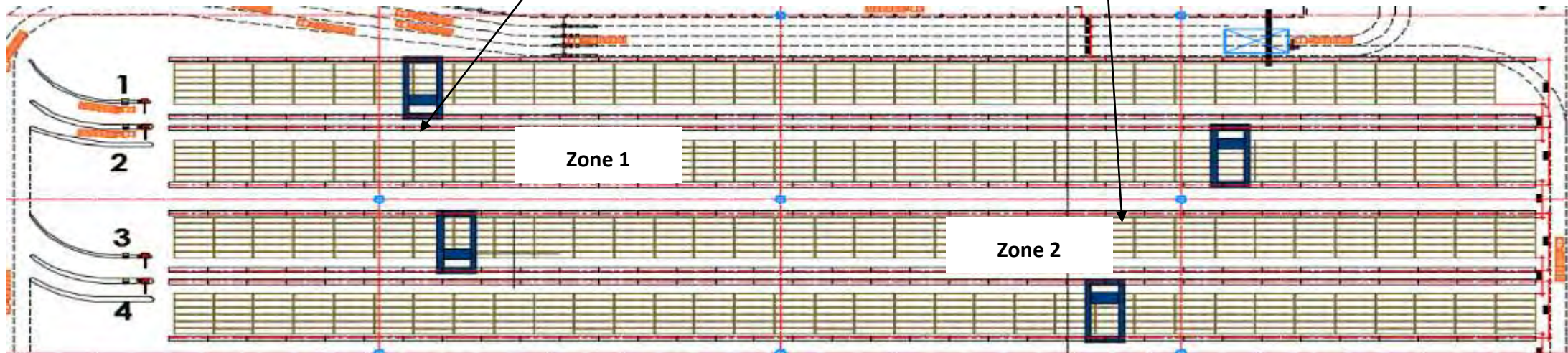
Example: TOS disables vessel container loading without VGM



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



The system finds a stack for the load 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 specific location in a stack is chosen by the system in accordance with assigned putaway strategies. For example, unoccupied locations at the lowest tier are taken first.

15%

Increased efficiency of MHEs thanks to using forecasting methods when an assignment is generated

Create a CHE route with checkpoints

CHE sequencing

Selecting the optimal job

Route search

Control job performance



RS empty runs reduction by **35-40%** thanks to “dual cycling” or ability of handling 2 containers (inbound and outbound) in one go.

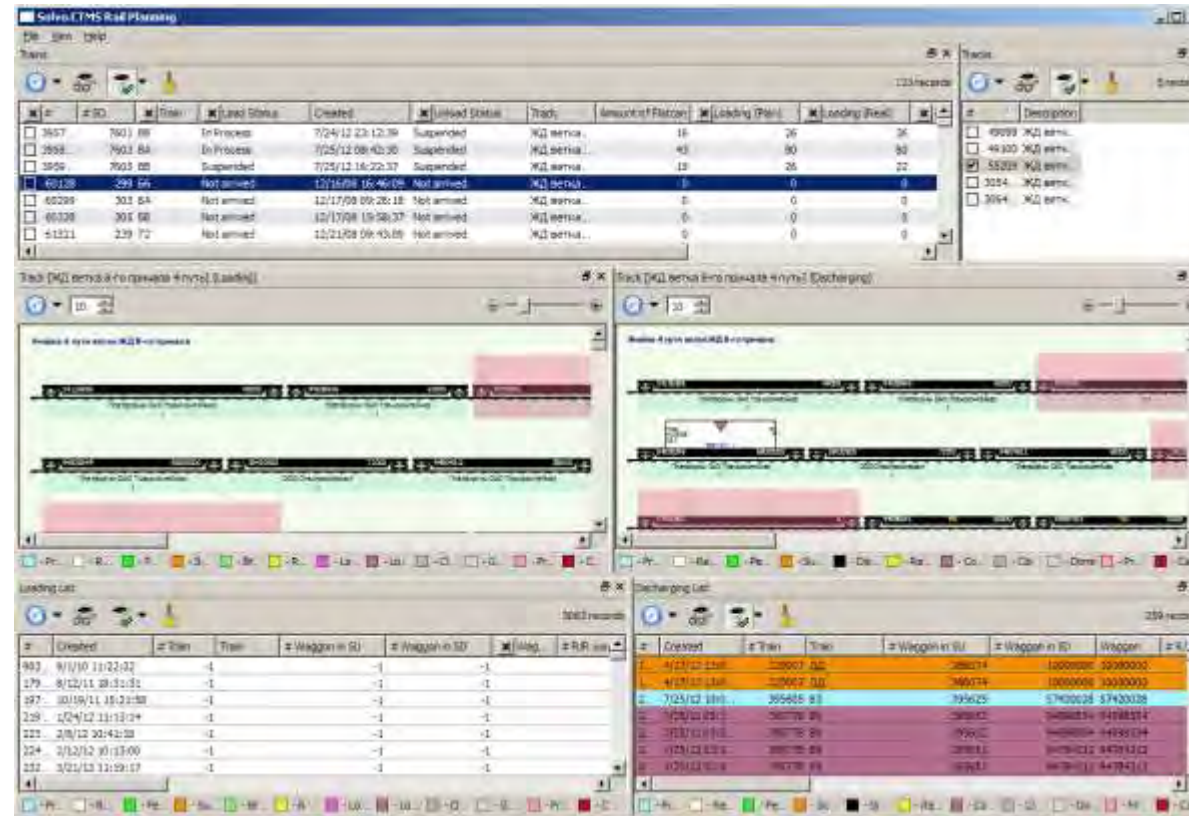


Used for **precise positioning of CHEs under any conditions**, allow to identify the location and other characteristics of CHE even the weight of the container in real time as soon as the container is grabbed by the spreader, even in tight spaces due to closely placed container stacks, which typically block the direct GPS signal between the receiver and satellite



Planning accuracy is increased
28%

Automatic planning of rail car staging increases personnel productivity



Solvo.Web Functions
Reset all filters and settings for tables

Truck Visit

Container

Time slots for period 25.06.14 12:41 - 26.06.14 00:41

Address	Table	Service	Unit	Time slot
2501100-1845190	Release	TRUCK	14	
	Release	TRUCK	11	
	TRUCK	TRUCK	2	
	TRUCK	TRUCK	20	
	TRUCK	TRUCK	14	
	TRUCK	TRUCK	14	
	TRUCK	TRUCK	3	
	TRUCK	TRUCK	34	
	TRUCK	TRUCK	20	
	TRUCK	TRUCK	40	
	TRUCK	TRUCK	3	
	TRUCK	TRUCK	20	
	TRUCK	TRUCK	20	
	TRUCK	TRUCK	5	
	TRUCK	TRUCK	14	

30%
Faster truck turnaround

Solvo.VBS regulates traffic flows of containers and heavy trucks to and from the port area and facilitates automation of the port and terminals gate processes using time-slotting technology and remote truck-visit requests.



Solvo supports the use of electronic authorizations signed with e-signatures for the pick up of import containers at the port.

- Authorizations formalized by forwarders for nominated containers through Solvo web-portal
- Authorization can be given to whitelisted truck drivers only
- Authorizations are signed using e-signatures right on the web-portal



90%

Elimination of the risk of forgery and releasing cargo to unscrupulous carriers or violators

Streamlined gate management processes: gate entry/exit, security check, truck-driver management in service center and more, allowing a significant reduction in truck turn-around time and rehandles in the yard.

30%

Faster truck turnaround

Reduced number of import containers rehandles by up to

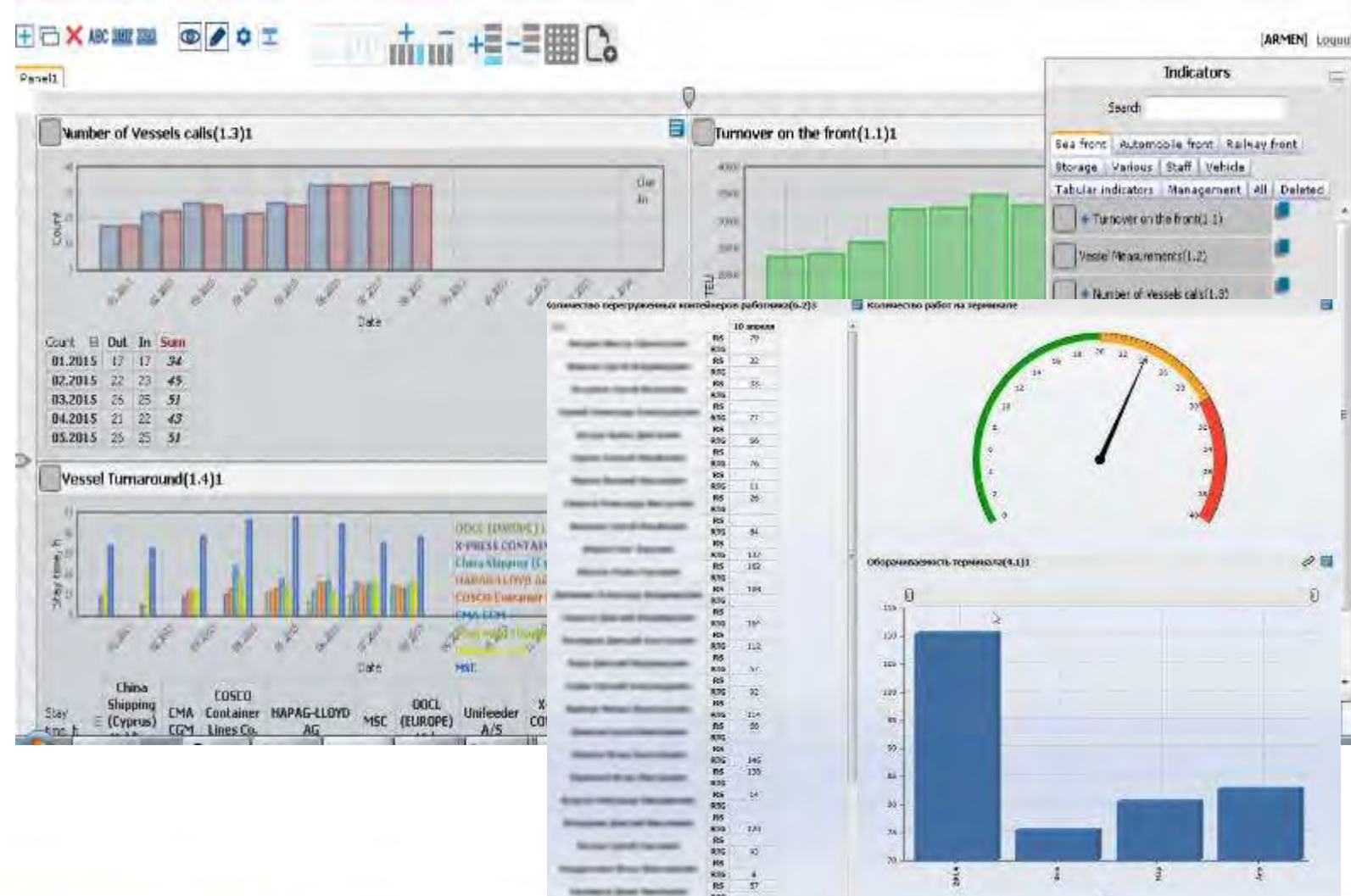
10%



Highlights:

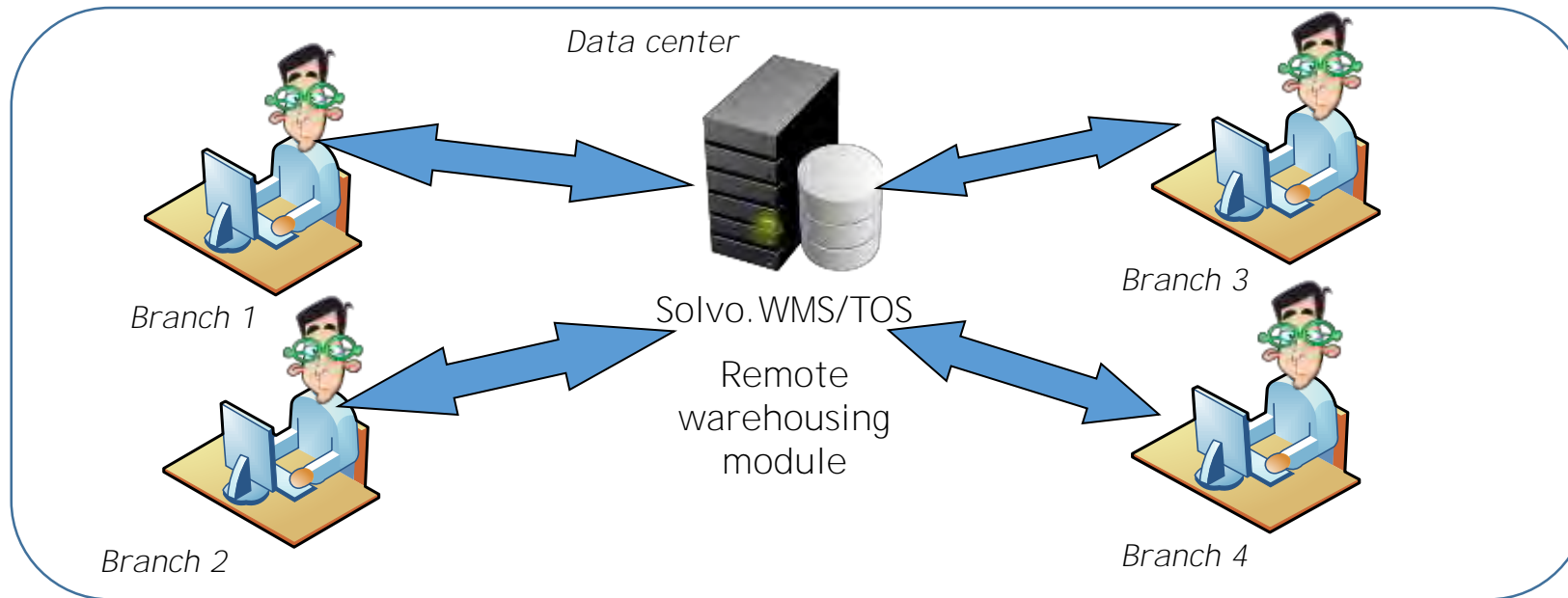
KPI dashboards are designed specifically to visualize all kinds of stats about operations of a stevedoring company.

The user works with KPI indicators through a special web-based GUI. The main window is an interactive dashboard the user can easily manage. The panel or dashboard consists of tabs similar to those of a WEB browser.



Multi-site = better visibility and lower deployment cost

- Allows to manage remote sites from a single location;
- Each warehouse has unique parameters and settings



Small increases
in efficiency = Greater efficiency
across the entire operation

- Increasing productivity and attractiveness doesn't always require large capital investment (cranes, berths etc)
- There are opportunities for short/medium term gains (ROI)
- Put your organization under the microscope and look for areas where efficiencies can be made

Solvo.TOS

Container terminal operating and document management system

Reefer management	EDI	KPI	Document management	Resource planning
Vessel and berth planning	Equipment dispatch	Gate planning and processing	Rail planning and processing	Yard planning and optimization
CFS	Billing	Web	Customs compliance	Advanced reporting

A state-of-the-art system tailored to the specific needs of the customer. Yet even the most basic out-of-the-box configuration enables effective and streamlined planning, equipment control and terminal workflow management in one database.





Tallyman from Ust-Luga port (Ferry complex)



Inspector from Ust-Luga port (Break-Bulk terminal Yug-2)

Solvo.TOS Cargo

Supports

- ✓ Break-Bulk
- ✓ Project cargo
- ✓ Containers
- ✓ Bulk, liquid cargo
- ✓ Ro-Ro

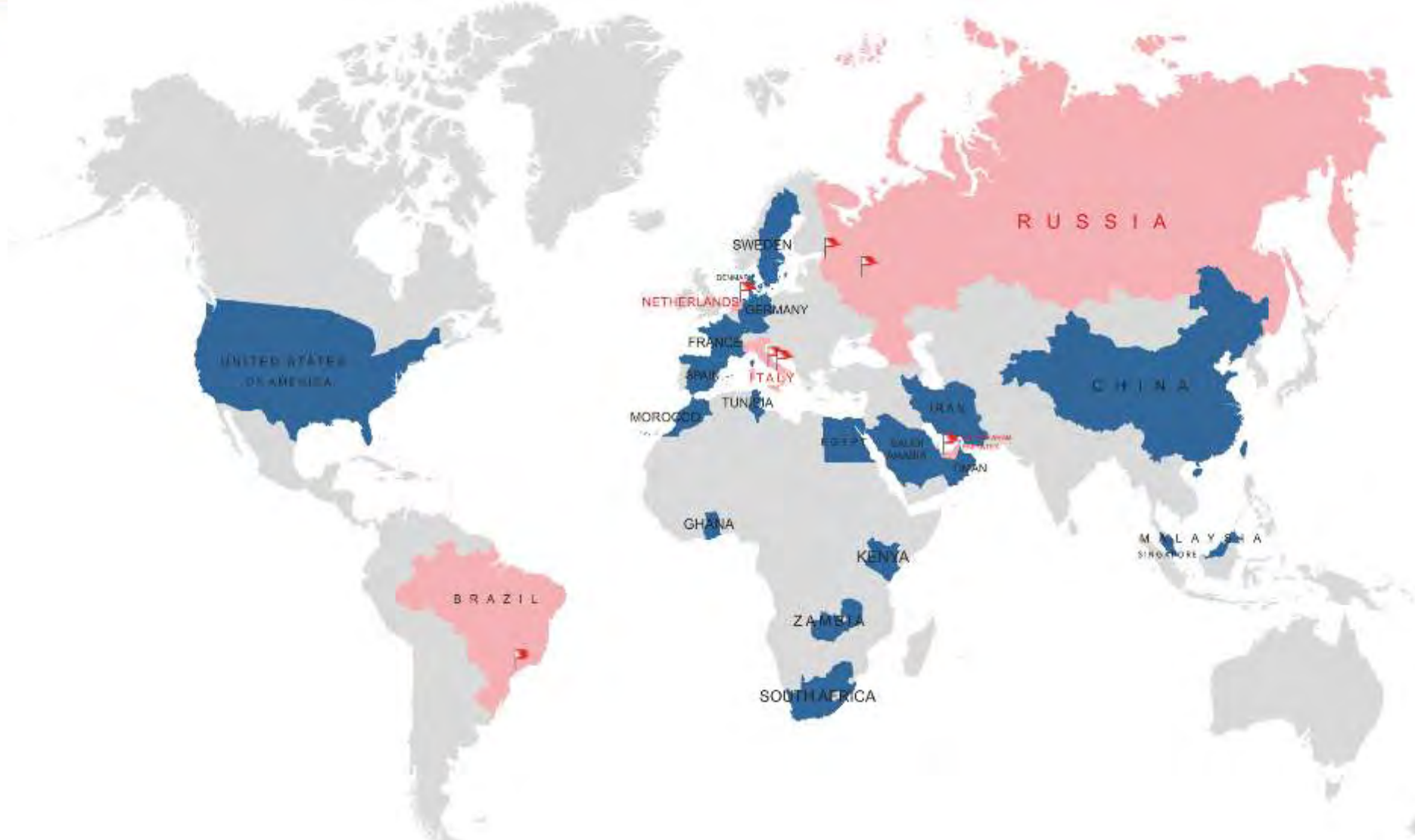
Features

- ✓ All-new WEB-interface
- ✓ Real-time load ID using barcoding or RFID
- ✓ Real-time process management using interactive graphic tools
- ✓ Resource planning and work-order management
- ✓ Integrated billing module

200+ projects



Solvo's international offices and partners



 Solvo's partners

 Solvo's offices:

HQ: Saint-Petersburg, Russia

International office for Europe: The Hague, The Netherlands

International office for Middle East: Dubai, UAE

International office for Mediterranean: Naples, Italy

Representative office: Moscow, Russia

Representative office: Rome, Italy

Representative office: Brazil, Sao Paulo

Thank you for your attention!

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sales@solvo.ru