SOLVO Europe B.V.

TRANSPORT MIDDLE EAST 2024

How IT Technologies Can Improve the Sustainability and Efficiency of Handling Ro-Ro and General Cargo at the Sea and Railway Terminal

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Senior Vice President Sales & Marketing

About SOLVO

28+ years experience

24/7/365 support

5 offices worldwide

400+ projects

Who we are

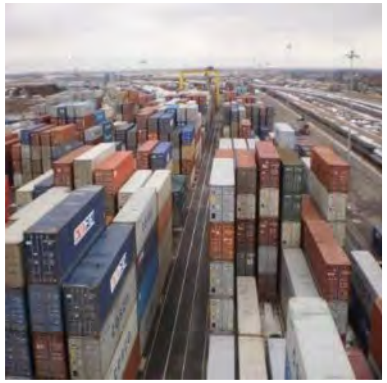
SOLVO is an international leading vendor of TOS, WMS and YMS solutions and systems integrator on the global markets.

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.

Business core areas



Solutions for ports and terminals

Solutions for yard management

Solutions for warehouse logistics

Consultancy in logistics and system integration

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Multinational brands

400+ projects

Modern ports are moving to Extended Supply Chain

INTERNATIONAL TRADE SUMMARY

- Moving to Global Supply Chain
- Global Information Environment Connecting All the Elements of the Supply Chain
- End to End visibility - to final customer

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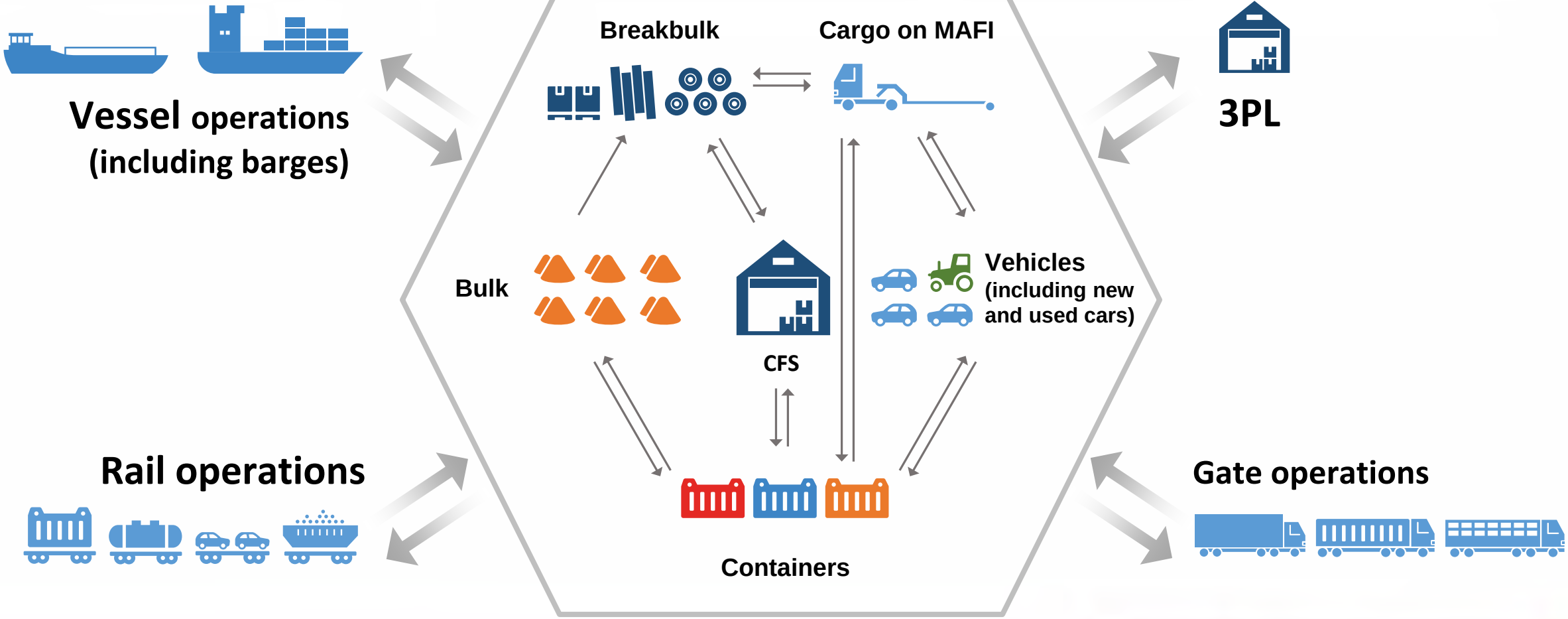
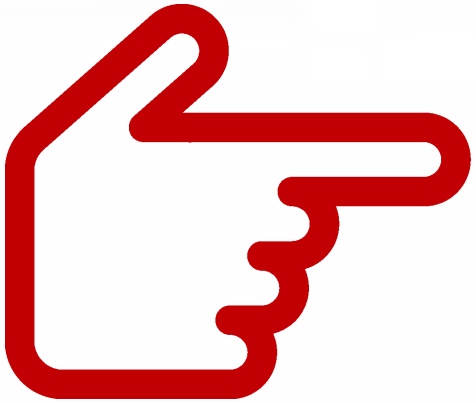
Modern TOS as a full Supply Chain solution and an integration platform

Support of Complex Technological Chains



Challenges to be solved using a Single Digital EcoSystem



- The different document format leads to problems with information exchange between various stakeholders in the supply chain;
- Poor planning cause delaying with the cargo delivery time and confusions due to lack of required information;
- Inability to track the status and current location along the extended Supply Chain ;
- Manual planning of personnel and equipment operations not feasible due to the increase of task and works, impacting into the processing time significantly.

SOLVO solutions portfolio

Solvo.TOS

Containers
General cargo, Bulk,
Ro-Ro and mixed cargo

KPI Module

GOS Module

VBS Module

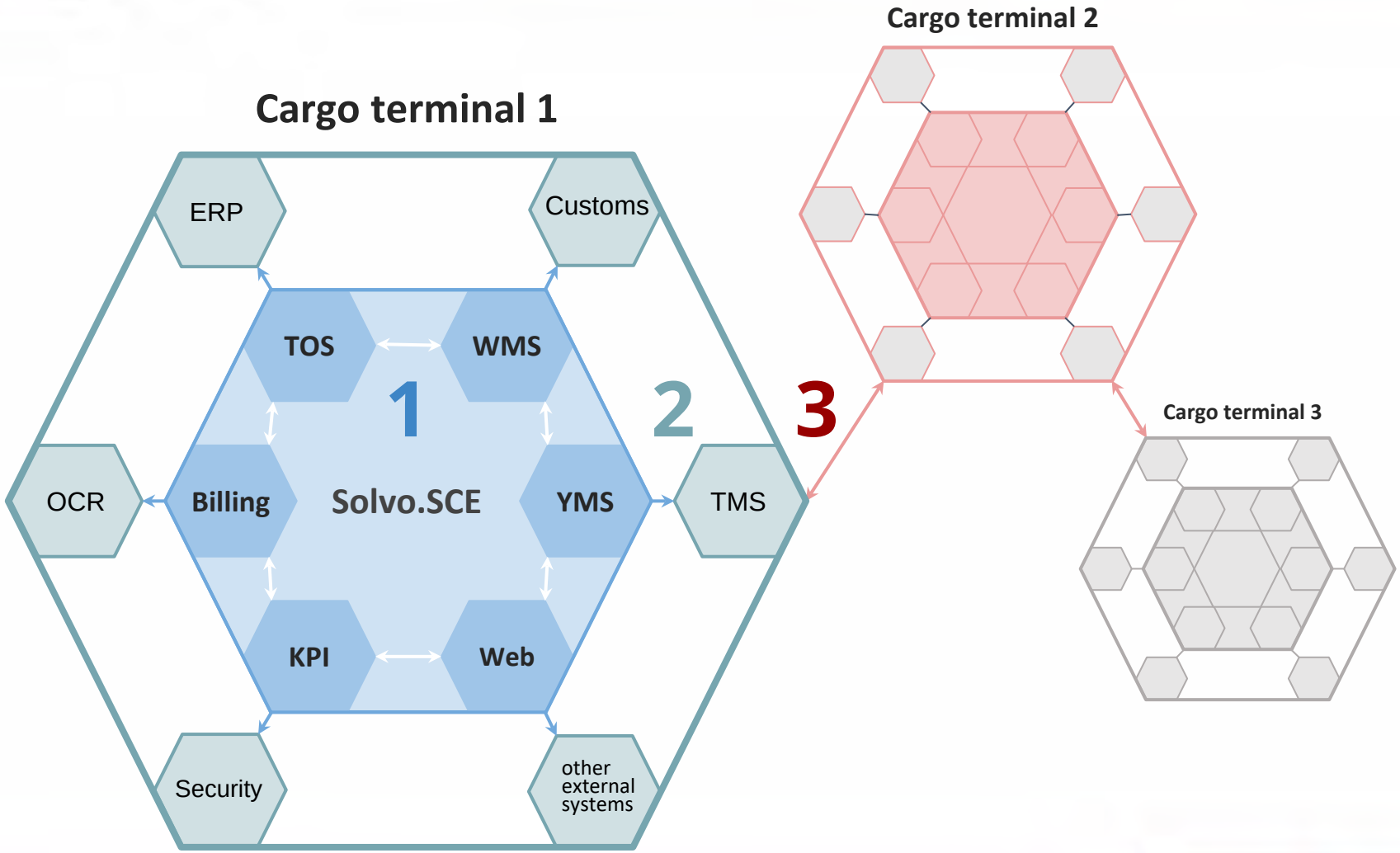
Billing Module

Solvo.YMS

Solvo.WMS
warehouse management

Palletized
and piece loads

System Integration Levels



Solvo.TOS overview

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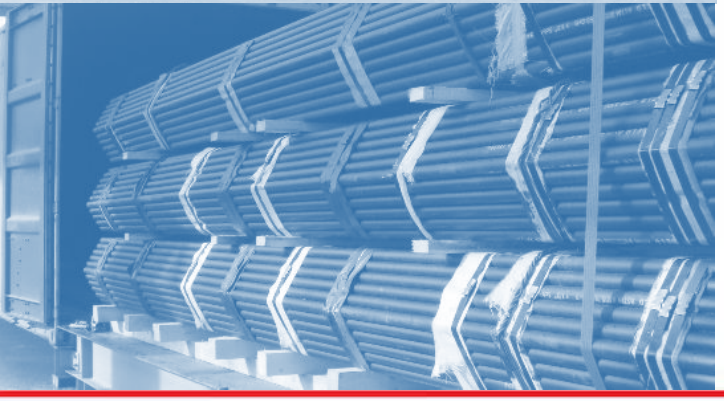
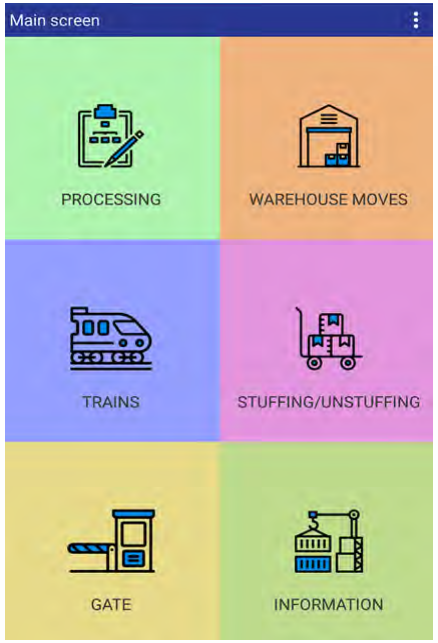
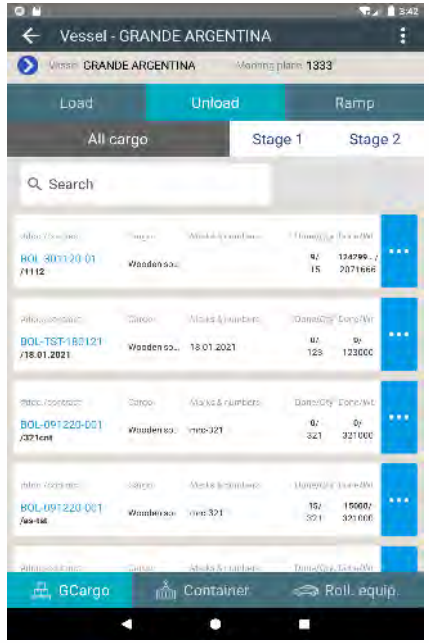
- Gate management
- Yard management
- Rail operations management
- Truck operations management
- Screening zone management
- CFS (stuffing/restuffing)
- Vessel planning
- **Solvo.TOS**
- Repair zone management
- OCR-systems (Gate, crane, rail)
- Empty container depot management
- Berth planning
- Remote control of automatic equipment
- Customs systems
- Data capture terminals
- CHE management
- EDI
- KPI
- Web

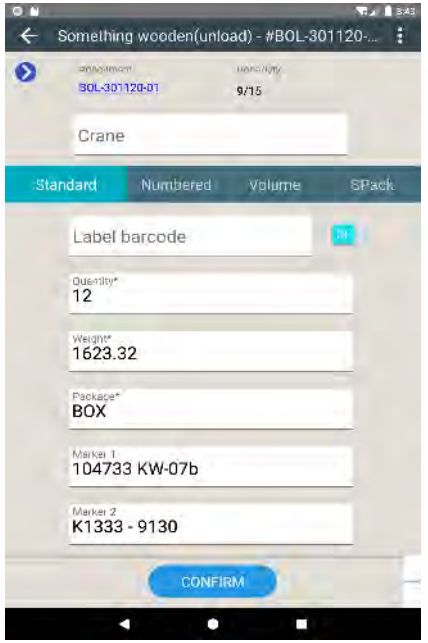
- EMERSON RTE — Automatic reefer monitoring
- SYMEO RADAR NEXT LEVEL, Trimble — Global positioning systems (DGPS, RTK, GNSS, RTLS)
- SAP, Microsoft Dynamics — External ERP systems
- ZPMC, LIEBHERR, CARGOTEC, KONECRANES — Crane systems STS,RTG/RMG, RTLS/DGPS

Cargo characteristics processed by Solvo.TOS





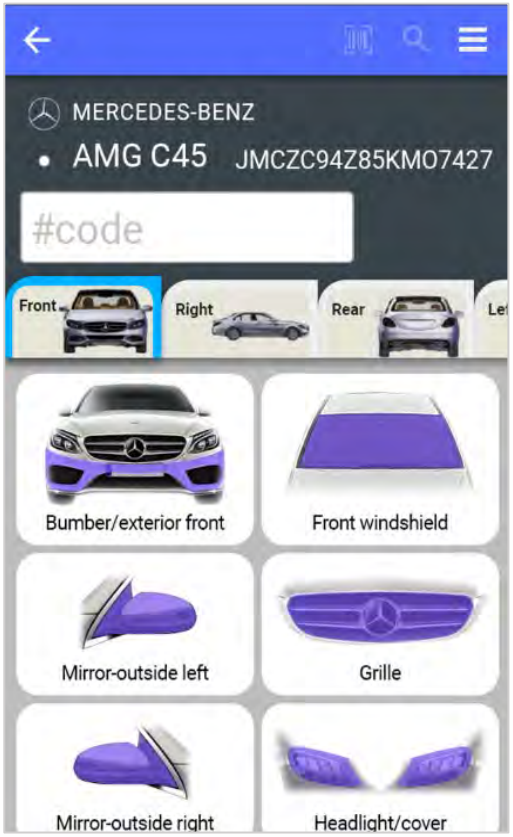


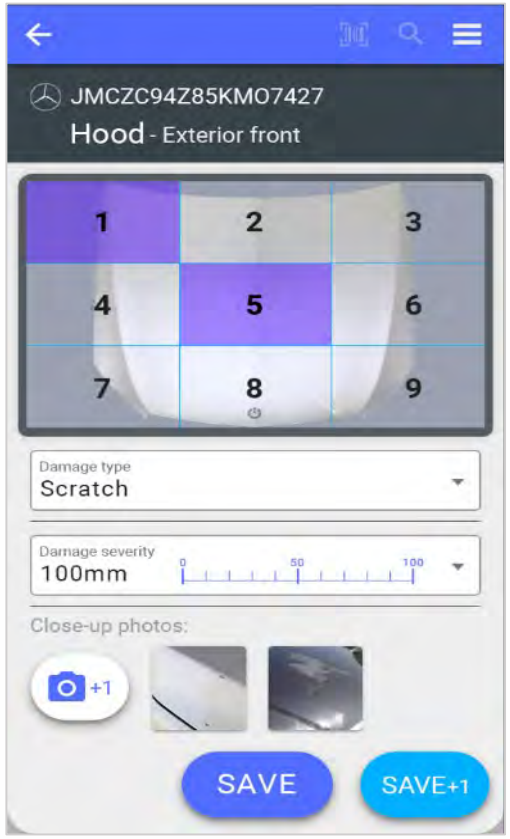


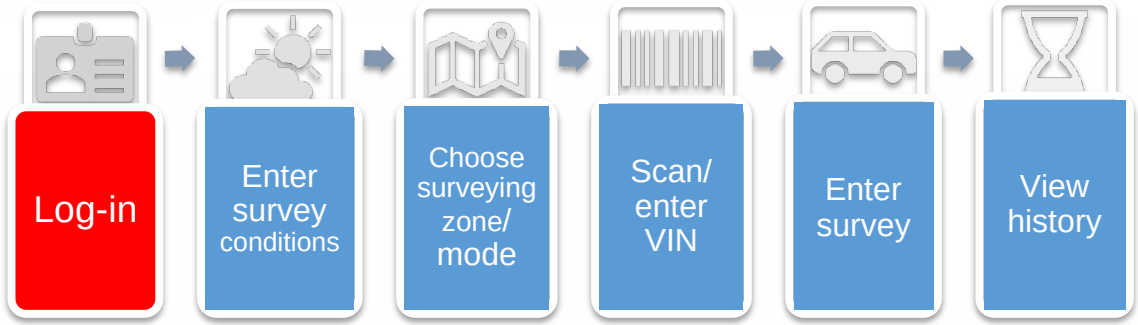
Among cargo characteristics processed by Solvo.TOS:
Package type, weight, quantity, dimensions (length, width, height), marking (label), markers.

For each cargo type the system can have specific characteristics, for example, cars:
VIN number, color, mode, dimensions (length, width), weight, type.

New Survey Mobile application





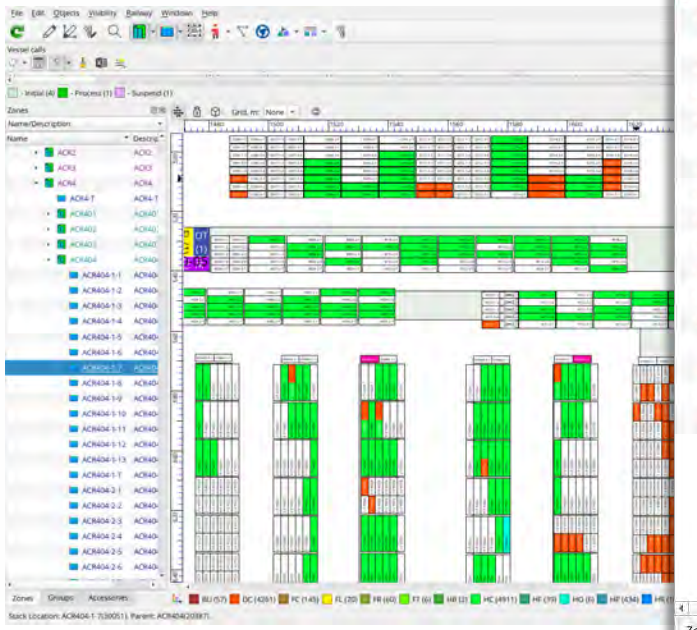


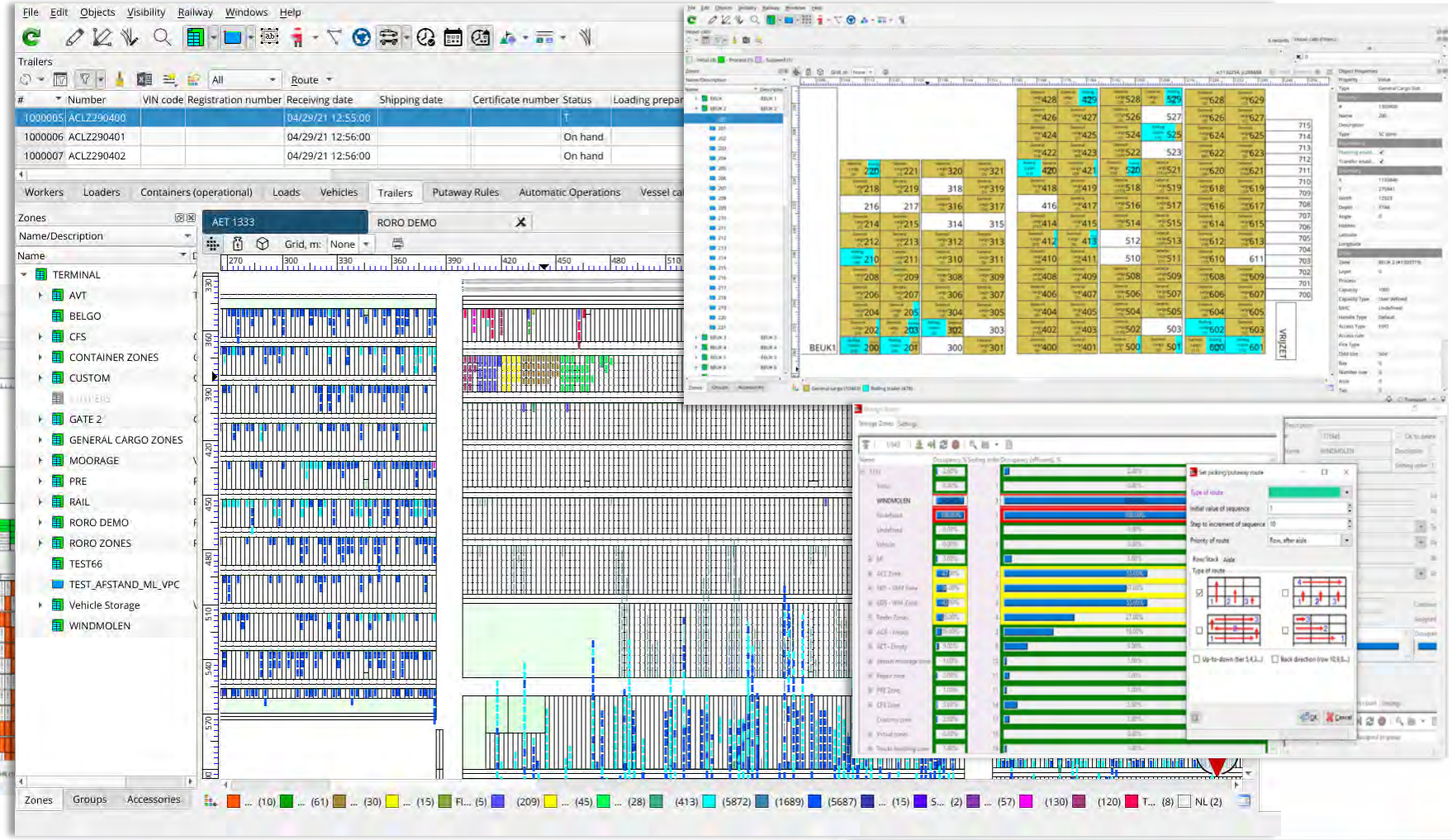
The application is based on the AIAG international standard.

The application has flexible settings and according to the weather conditions of the surveyor: before starting the shift it is necessary to set such parameters as time of day, weather conditions and vehicle condition: soiled, clean, snow/ice covered.

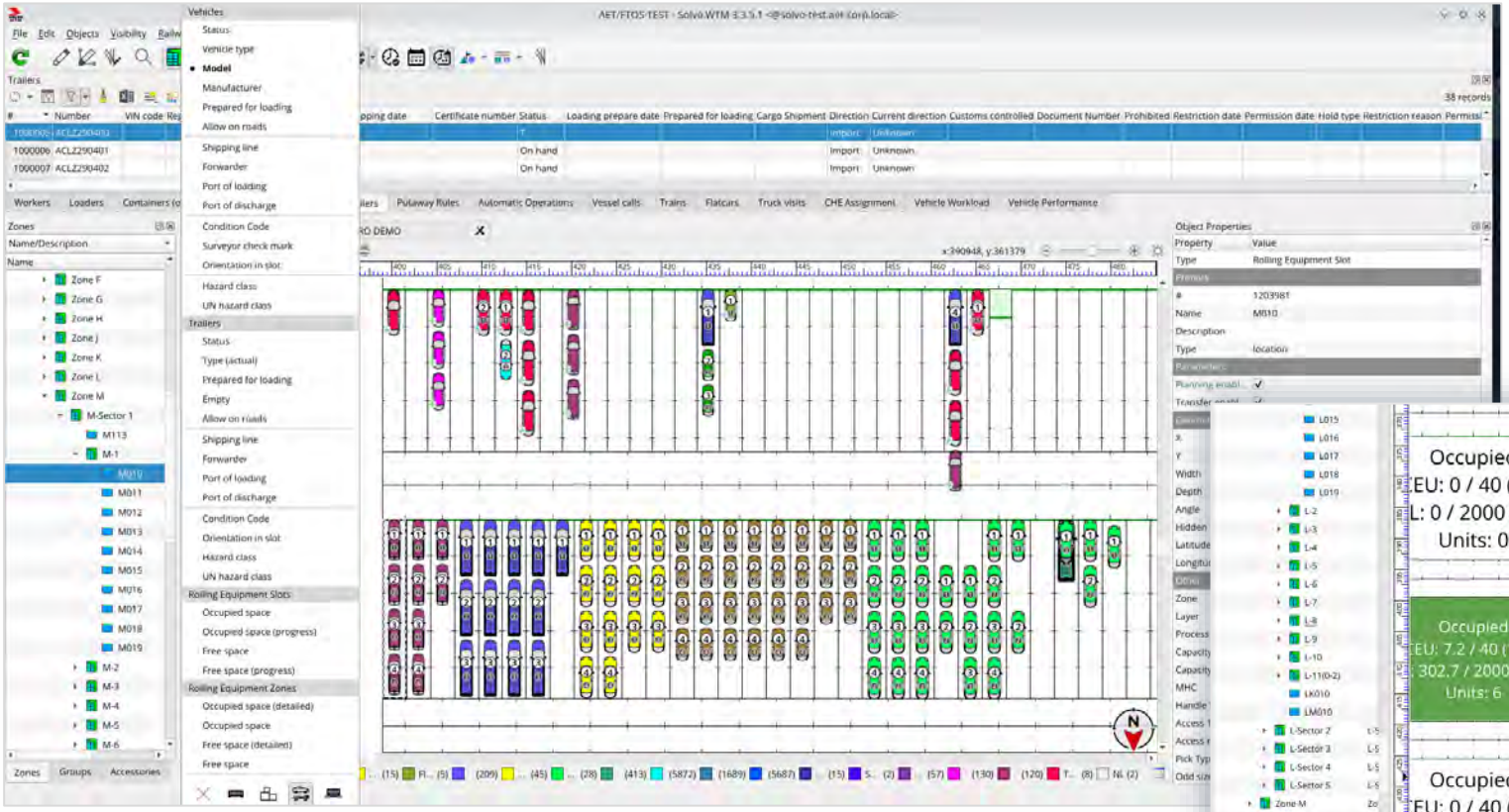
Yard Management

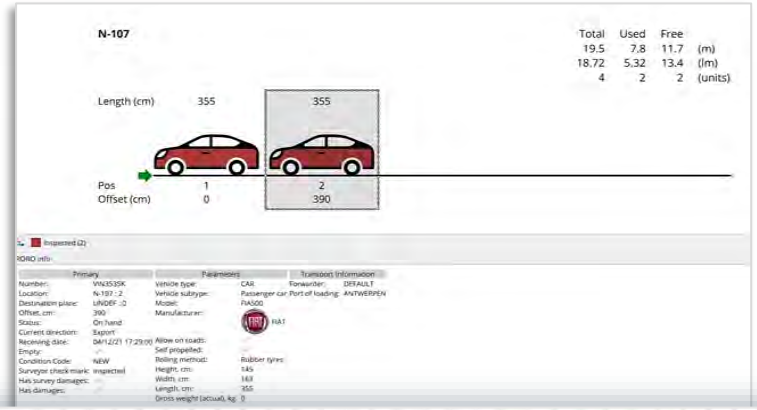
- **WTM:** Graphic terminal layout viewer and editor
- **Dynamic stacking based on rules and strategies**
- **Dock scheduling**

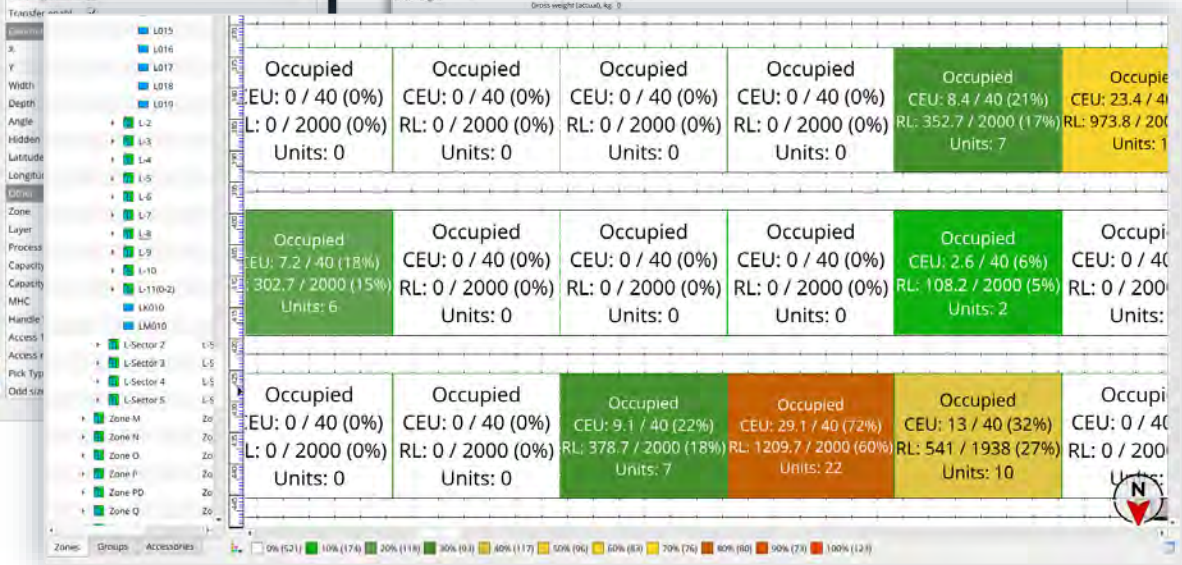




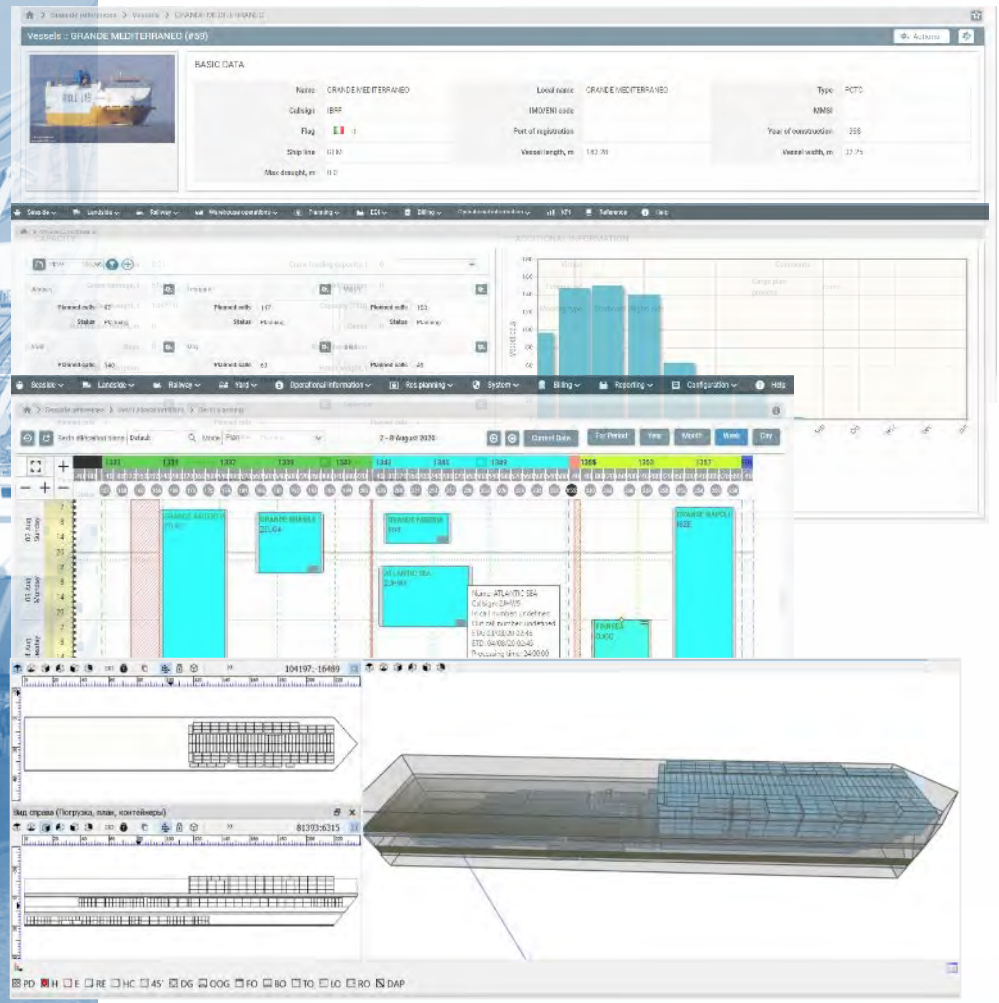
Realtime visibility.
Graphical terminal layout







Vessel planning capabilities

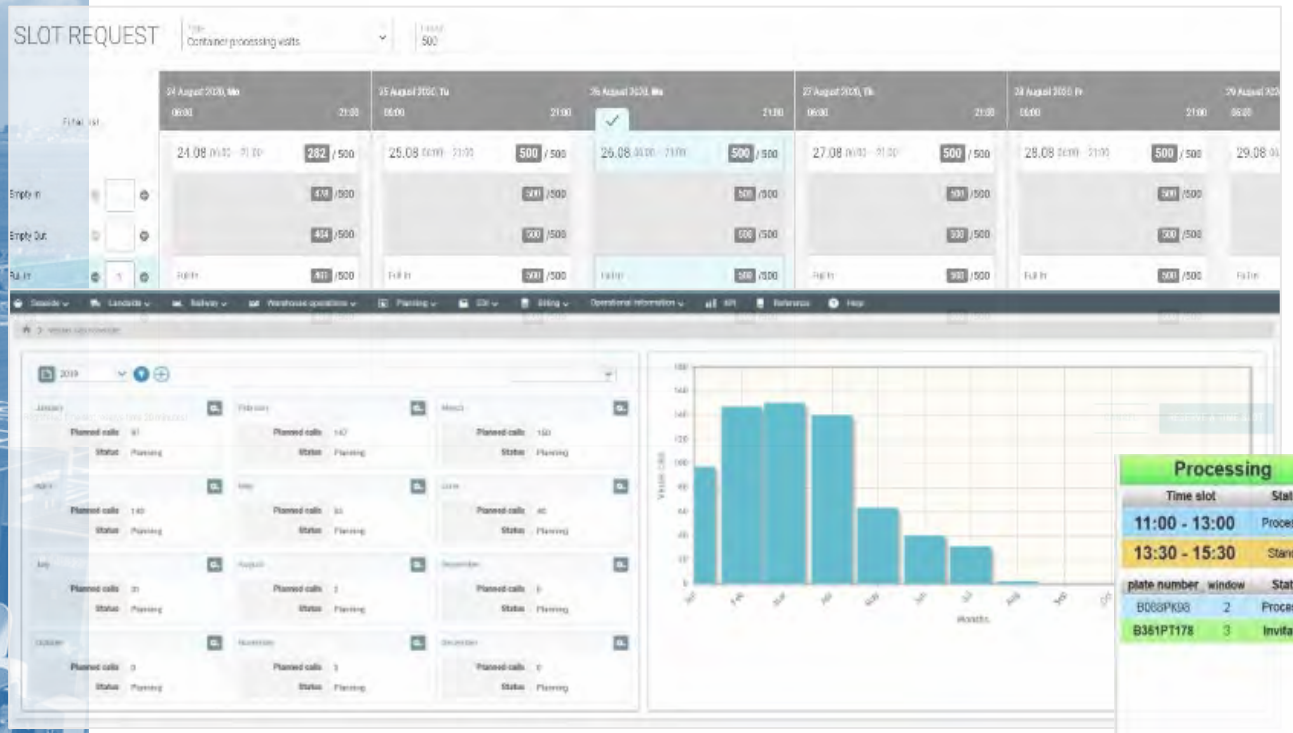


Solvo.TOS has a wide range of options for planning vessel arrivals.

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.

Truck Visits



Solvo.TOS creates truck appointment using time slotting technology.

Processing

Time slot	Status
11:00 - 13:00	Processing
13:30 - 15:30	Standby

plate number	window	Status
B088PK98	2	Processing
B351PT178	3	Invitation

Standby

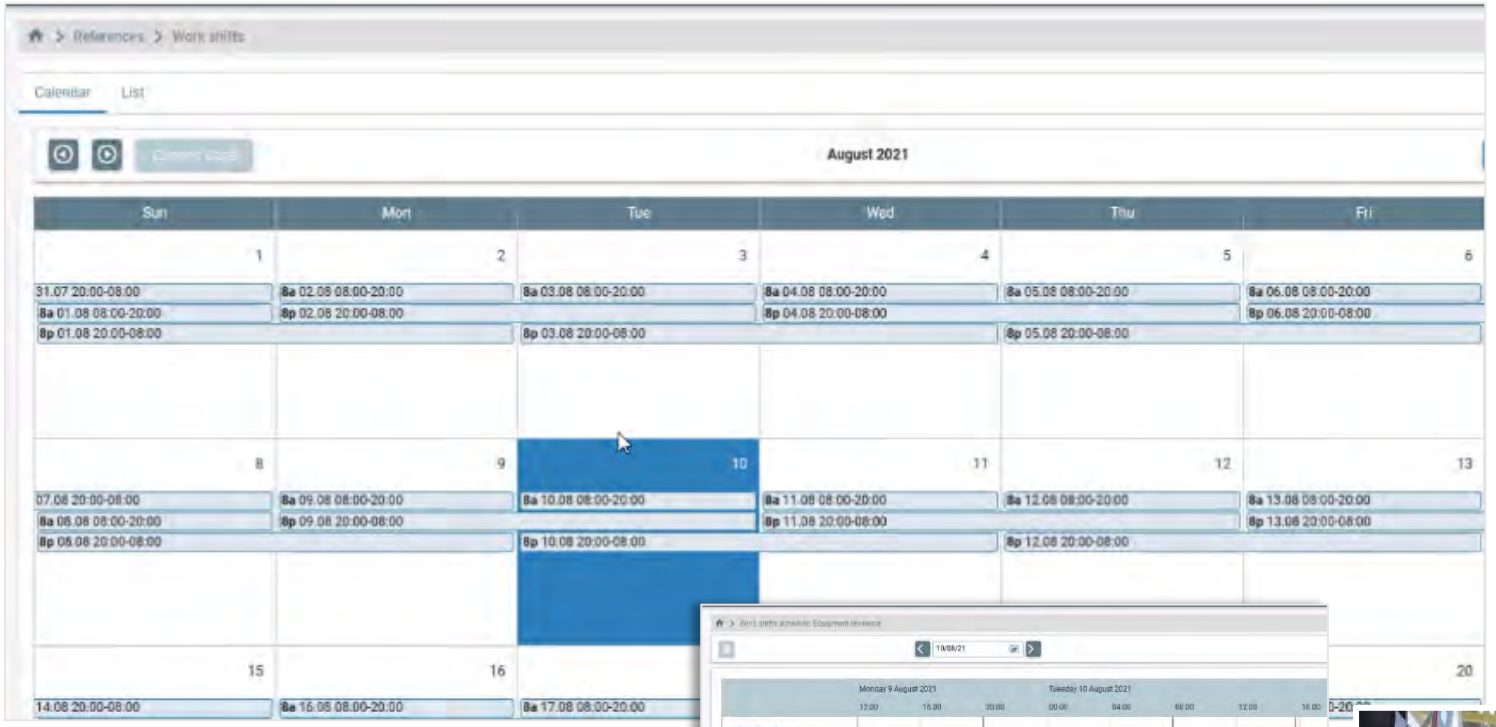
plate number	duration	plate number	duration	plate number	duration
B702OK178	4 min.	B630BO178	28 min.		
K499HT180	4 min.	A844CO35	32 min.		
B969MM178	8 min.	Y027CP78	32 min.		
H790PP178	8 min.	B457TP98	36 min.		
M587MC178	12 min.	B072EO178	36 min.		
T706XY47	12 min.	O932PT178	40 min.		
KD49TB178	16 min.	B806KA98	40 min.		
Y687KE78	16 min.	P910KX47	44 min.		
B070OE178	20 min.				
H356TC178	20 min.				
B935BP178	24 min.				
B156CB178	24 min.				

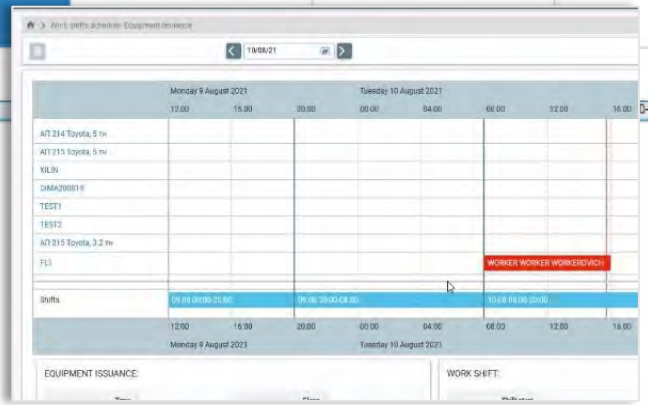
Solvo.TOS for General Cargo

General cargo is one of the most complex categories in terms of organization of handling, storage, and accounting.

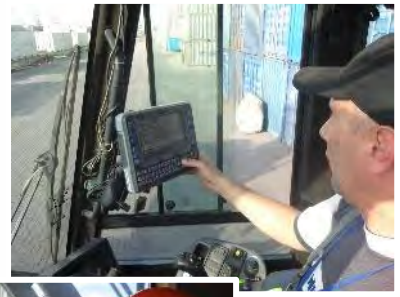
Solvo.TOS enables to manage all the operations with general cargo taking into account it's dimensions, weight, cargo types, storage rules, handling equipment and other criteria

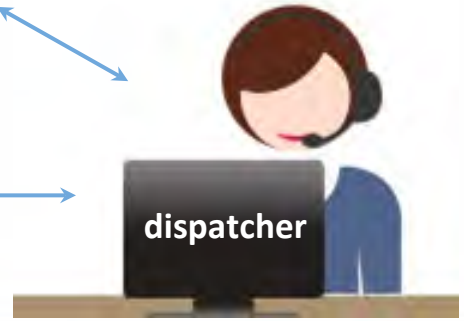
Personnel & Equipment productivity



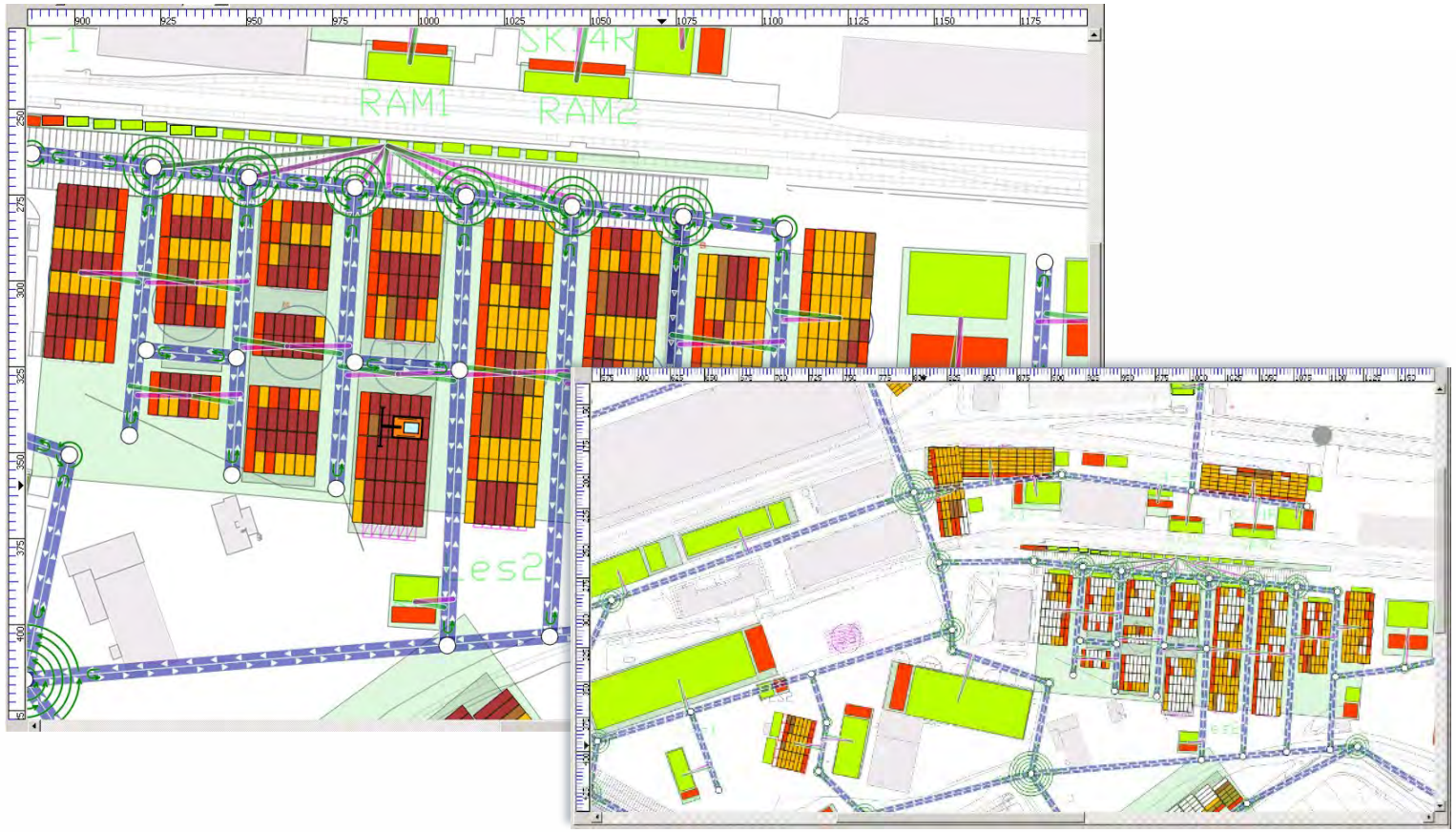


Solvo.TOS provides visibility where terminals are allocating their labor budgets and **help them to optimize human assets.**



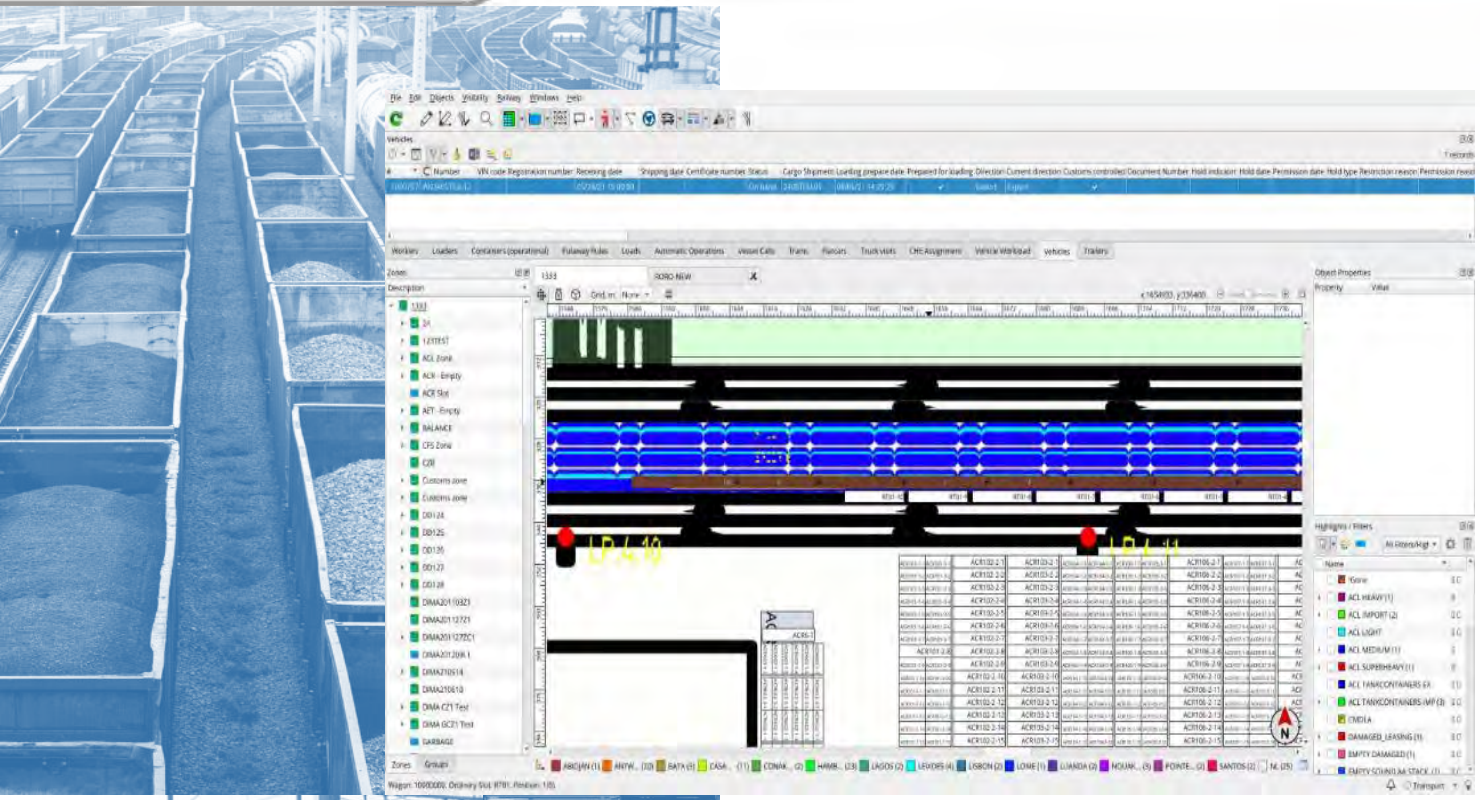


CHE Accounting and assignment



- Solvo.TOS 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

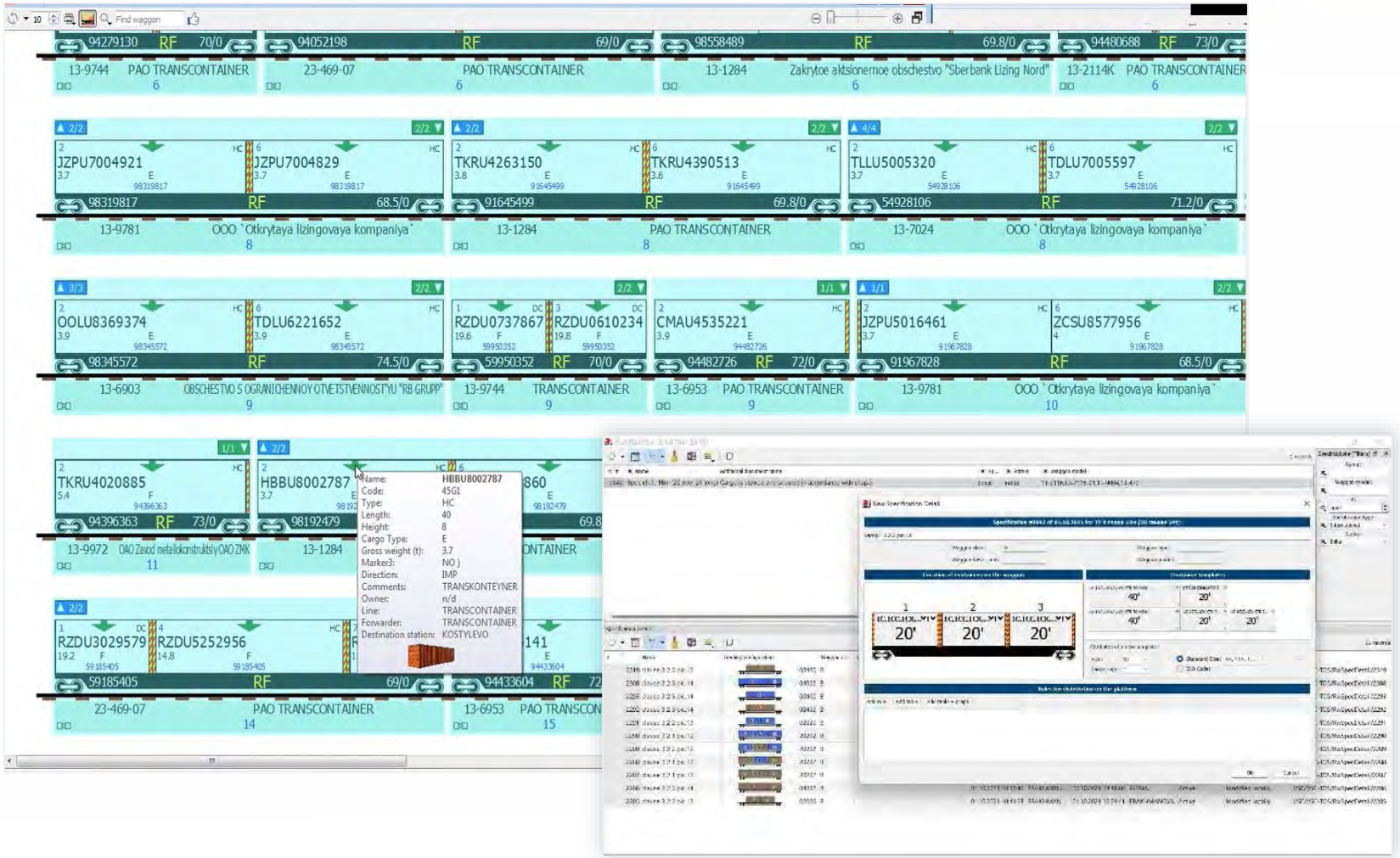
Rail operations



The system can perform automatic scheduling on the railroad, operating such data as:

- Cargo information
- Railcars parameters
- Various types of documents
- Planning, managing and monitoring the progress of loading/unloading trains based on ETA/ETD)

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**

Automation results

- ✓ Increase cargo handling efficiency & terminal throughput
- ✓ Increase personnel & equipment productivity
- ✓ Improve transparency of technological and commercial processes
- ✓ Increase in load handling speed in the storage zone
- ✓ Reduction in re-handles (non-productive container moves)
- ✓ Eliminating human factor
- ✓ Improving health and safety ops
- ✓ Finding efficiencies in processes and logistics
- ✓ Improving margins
- ✓ Reducing operating costs

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Smart solutions for your logistic tasks