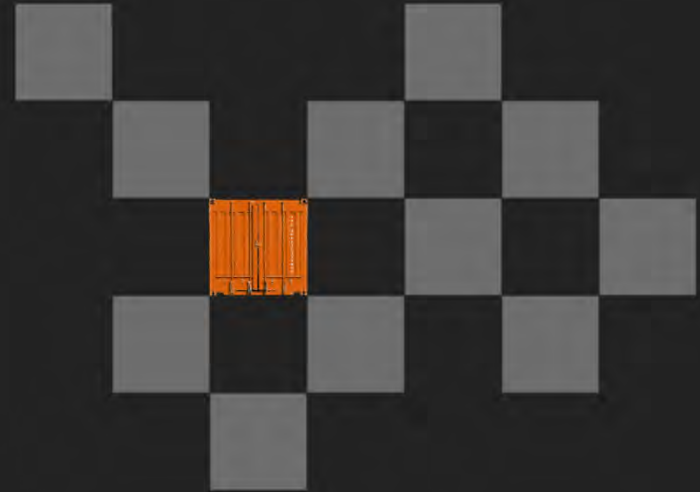


# RETHINK YOUR WAY OF OPERATION TO STAY COMPETITIVE



Anja Jablonski, Project Manager, ISL Applications GmbH  
[jablonski@isl-applications.com](mailto:jablonski@isl-applications.com)

# AGENDA



- Introduction
- Overview CHESSCON software solutions
- CHESSCON solutions - review your operation strategies
- Conclusion

# WHO WE ARE

## ISL APPLICATIONS GMBH

- founded 2010 as ISL's commercial subsidiary
- further development, rebranding and selling of simulation based solutions



Holger Schütt  
CEO, Prof. Dr.- Ing.



Horst-Dieter Kassl  
CTO, Dipl.- Ing.




## ISL INSTITUTE OF SHIPPING ECONOMICS AND LOGISTICS

- research based consultancy institute in maritime logistics
- founded 1954
- private foundation
- suited in Bremen & Bremerhaven, Germany
- initial development of simulation software



## WHAT WE DO

- marketing and selling
- customising a first model  software training
- complete studies and consulting...

...based on our software solutions with the knowledge of our experts



The background image shows a container terminal at sunset or sunrise. A large yellow gantry crane is in the center, lifting a container. A red forklift is in the foreground. Rows of colorful shipping containers (red, green, yellow) are stacked on the left and right. The ground is paved with cobblestones and has some tracks. The sky is blue with some clouds. On the far left, there is a vertical black bar with a grey and white checkerboard pattern at the bottom.

MORE THAN 25 YEARS EXPERIENCE IN

container terminal planning

TOS testing and training

optimise your operation

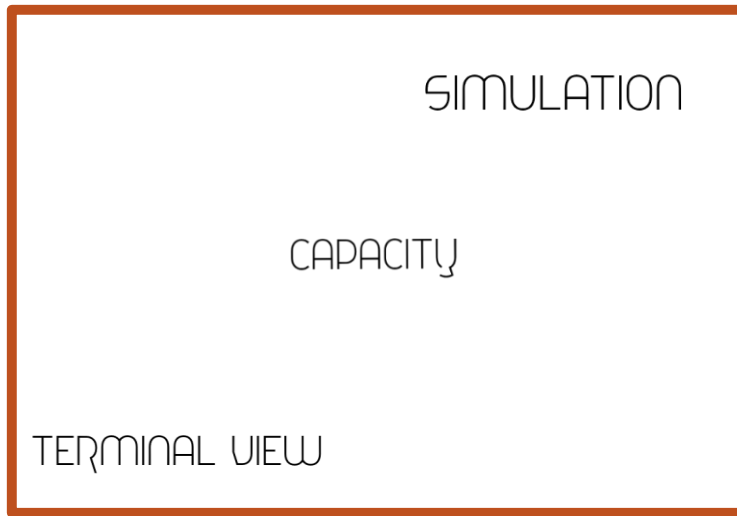




# OPTIMISATION TOOLS FOR CONTAINER TERMINALS



high  
level of detail  
low

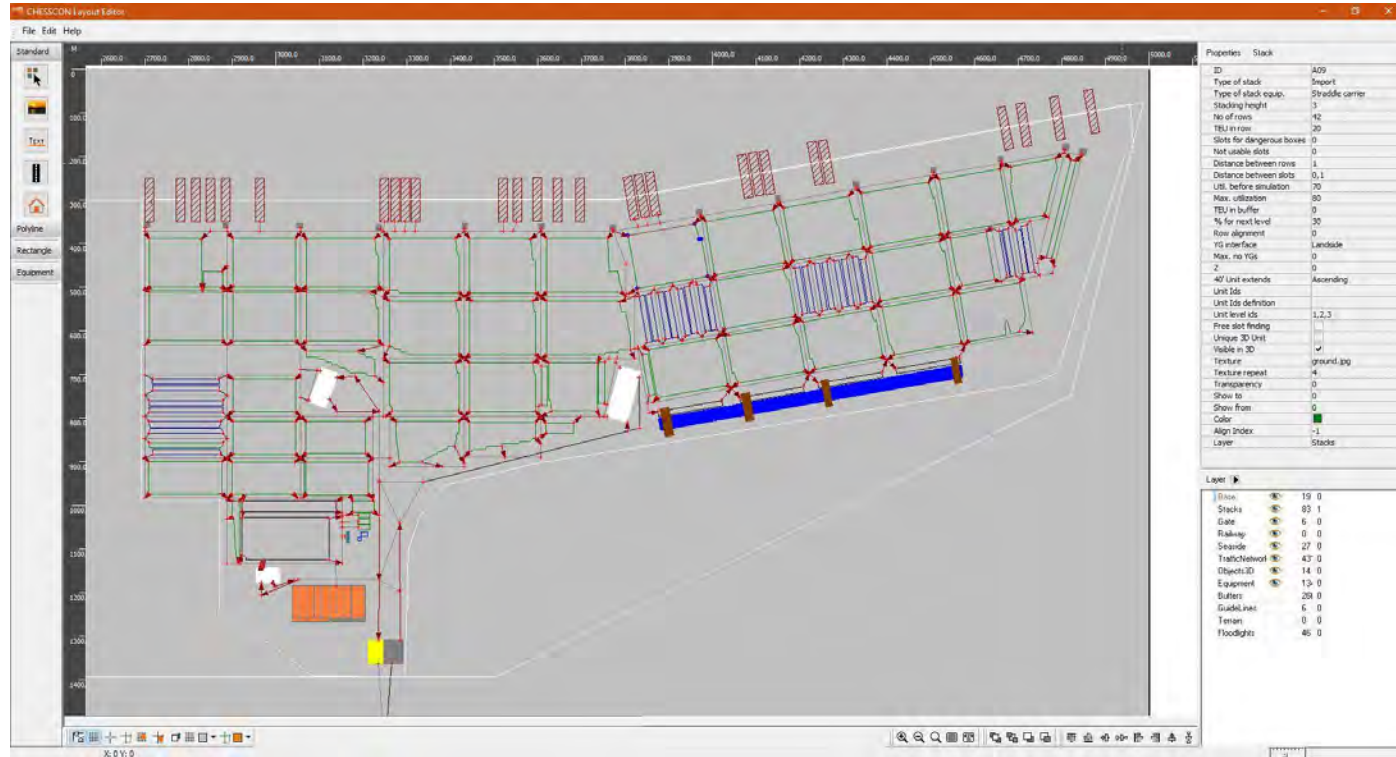


VIRTUAL TERMINAL

SHIFT PREVIEW

YARD VIEW

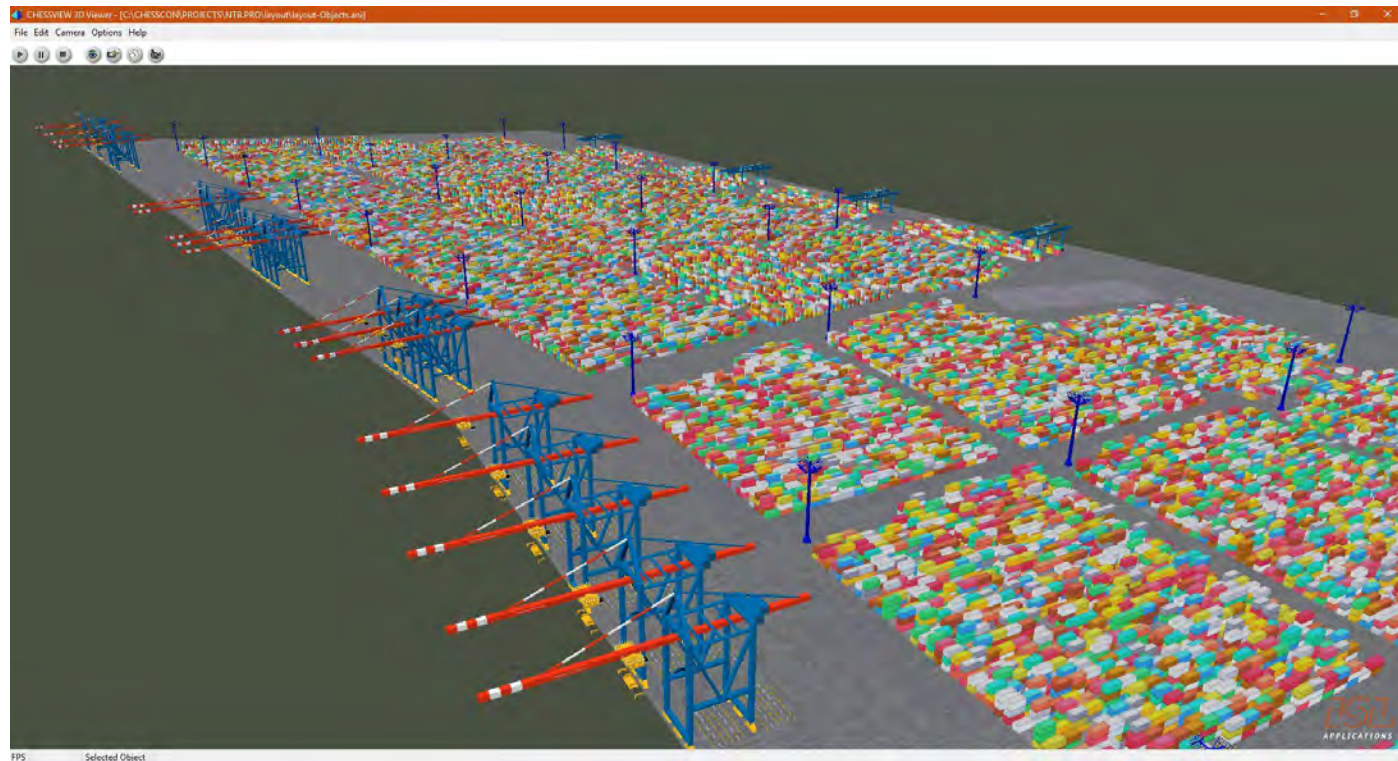
# HOW TO DESIGN A TERMINAL WITHIN HOURS?...



SOLUTION: CHESCON TERMINAL VIEW



...AND PRESENT IT IN 3D

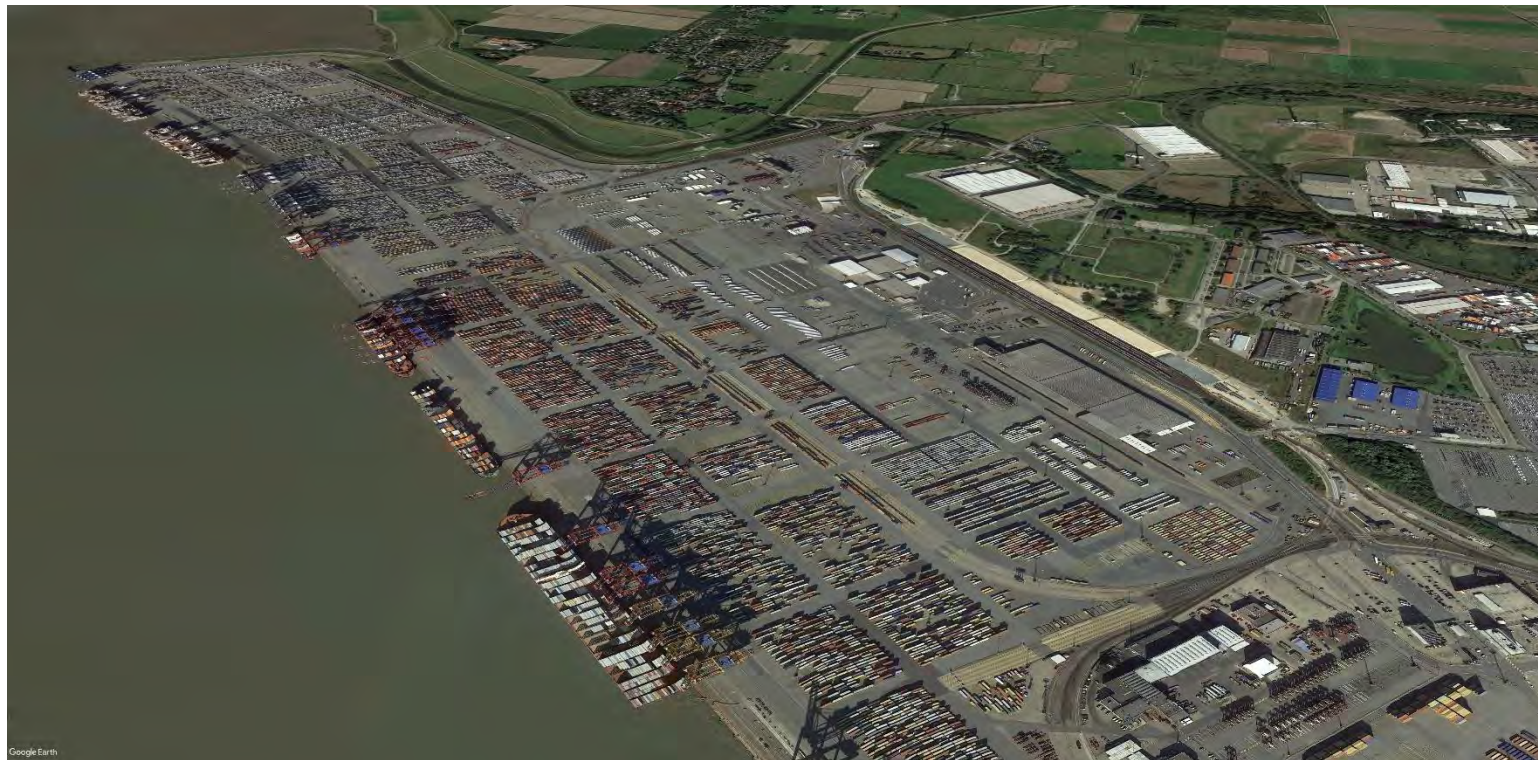


SOLUTION: CHESSCON TERMINAL VIEW





# REAL CONTAINER TERMINAL





# FIRST QUESTIONS DURING PLANNING PHASE



■ Original CHESCON screenshot

- berth space available?
- enough slots for reefers?
- number of STS cranes?
- vessel plan with differentiation by vessel types

SOLUTION: CHESCON CAPACITY



# VARIOUS LAYOUTS, WHICH ONE IS THE BEST?



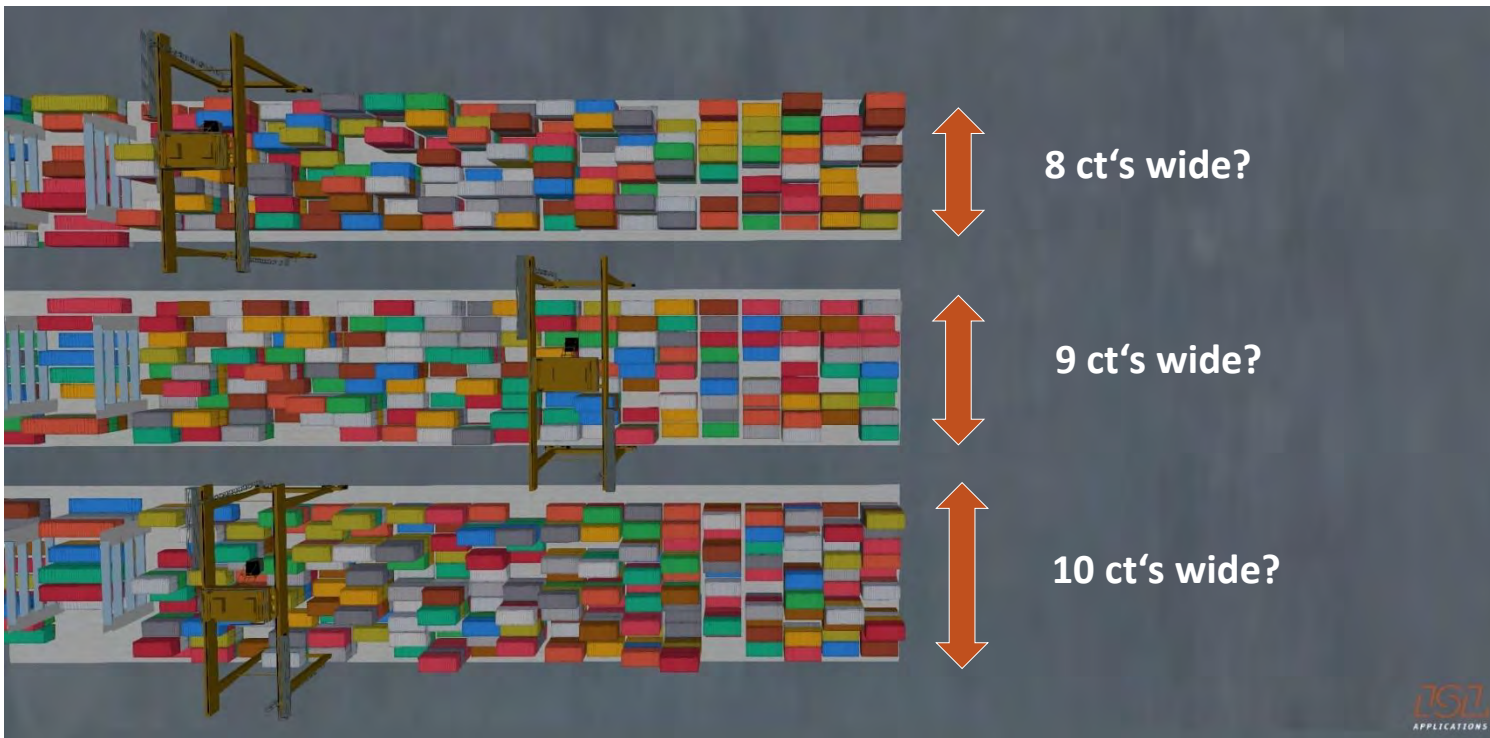
- perpendicular or parallel to the quay depending on yard technology

SOLUTION: CHESSCON SIMULATION





## THE OPTIMAL STACK WIDTH?



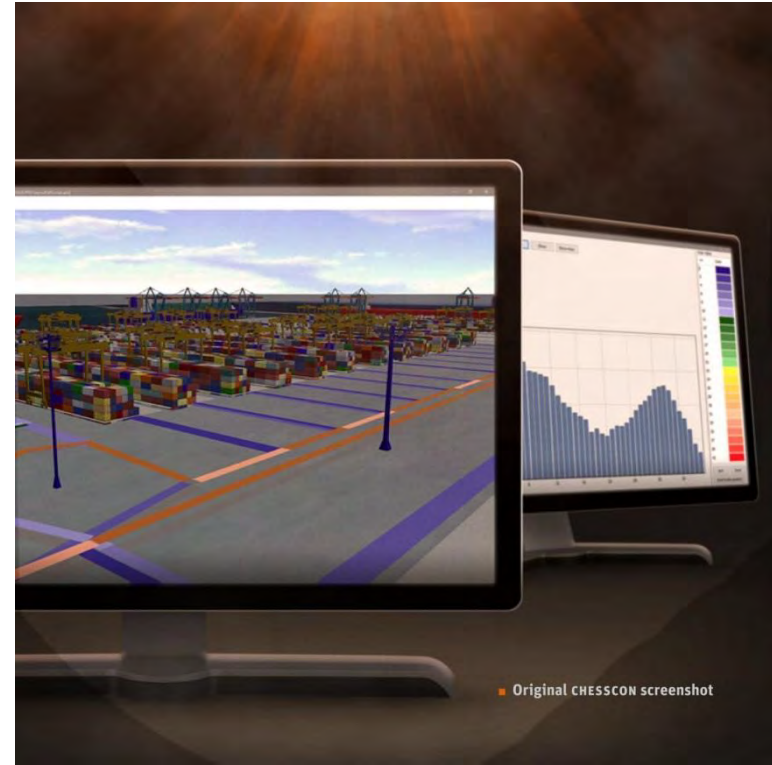
SOLUTION: CHESSCON SIMULATION



## DIFFERENT SCENARIOS

- Possible for your terminal to handle volume in peak shifts?
- Number of equipment and utilisation?
- Traffic network
  - how dense is your traffic
  - detect bottlenecks

SOLUTION: CHESSCON SIMULATION







# CHESSCON VIRTUAL TERMINAL



A software tool to build a virtual copy of a real container terminal



SOLUTION: CHESSCON VIRTUAL TERMINAL



# OPTIMISATION TOOLS FOR CONTAINER TERMINALS



high  
level of detail  
low

TERMINAL VIEW

CAPACITY

SIMULATION

VIRTUAL TERMINAL

SHIFT PREVIEW

YARD VIEW

preplanning

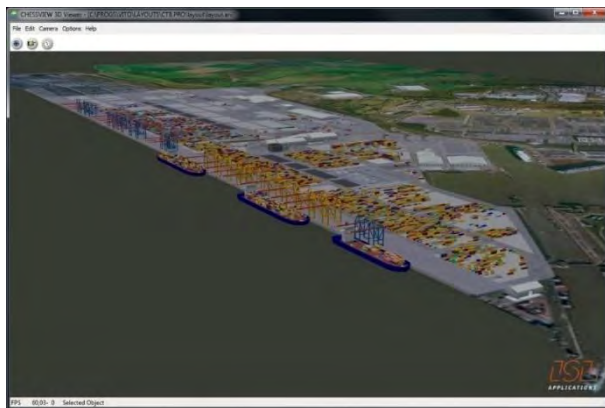
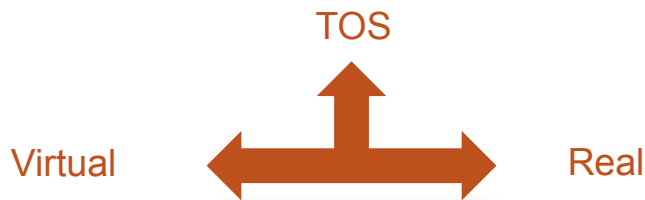
planning

start-up

operation

# WHAT IS POSSIBLE WITH CHESSCON VT?

- use your Terminal Operation System (TOS)
- use your software interfaces
- but use a Virtual Container Terminal



# BUT FOR WHAT I CAN USE IT?

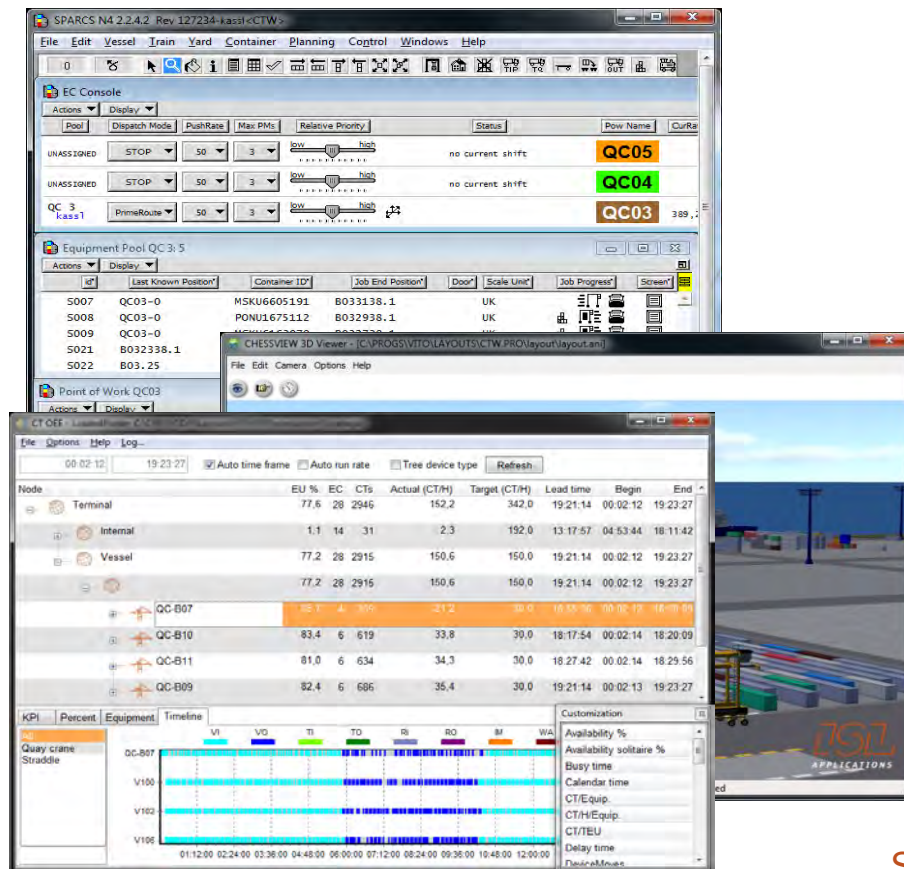


■ Original CHESSCON screenshot

- Start up of new container terminals
- Fine tuning of TOS settings & strategies
- Expansion of existing terminals
- Upgrade and testing of your TOS
- On-the-job training
- Stress-tests

**SOLUTION: CHESSCON VIRTUAL TERMINAL**

# BENEFITS



Provide new training methodologies

- without burning fuel
- without operational costs
- without disturbing the real operation

Find bottlenecks or overutilization

- Optimize utilization of devices
- Improve your terminal productivity
- Reduce operational costs

SOLUTION: CHESSCON VIRTUAL TERMINAL





## CHESSCON YARD VIEW

- Software tool for yard planners
- no simulation tool
- for operational planning



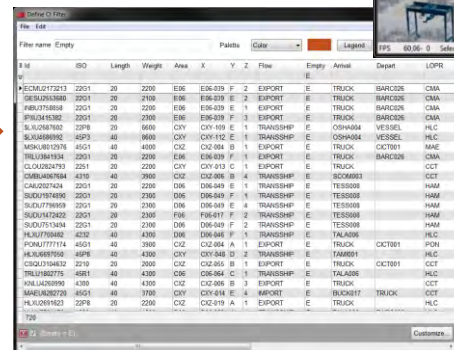
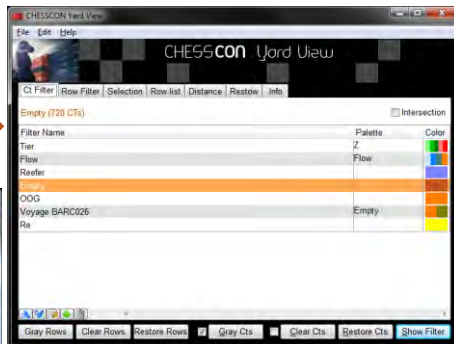
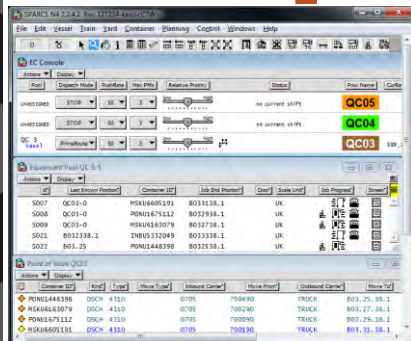
# HOW DOES IT WORK

- TOS writes the container inventory to a flat file
  - ✓ online connection also possible
 (unlimited number of attributes)
- Yard View reads this flat file
- the user can create container filters like in Excel
- get a 3D overview with just one click

User defines filters

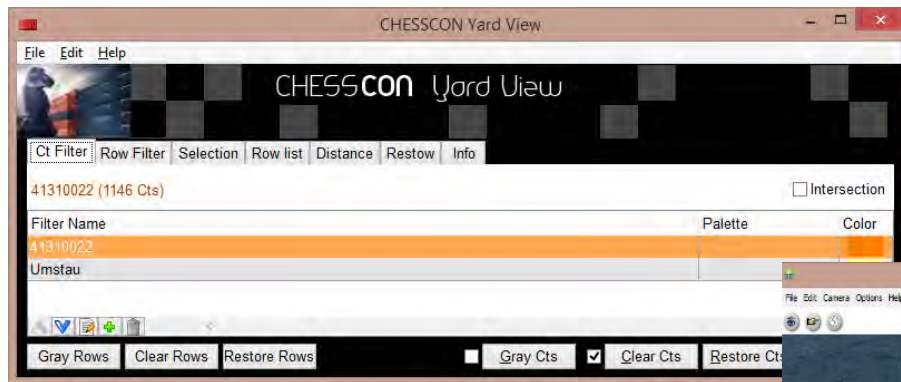
TOS writes inventory

Only one click to show filter in 3D



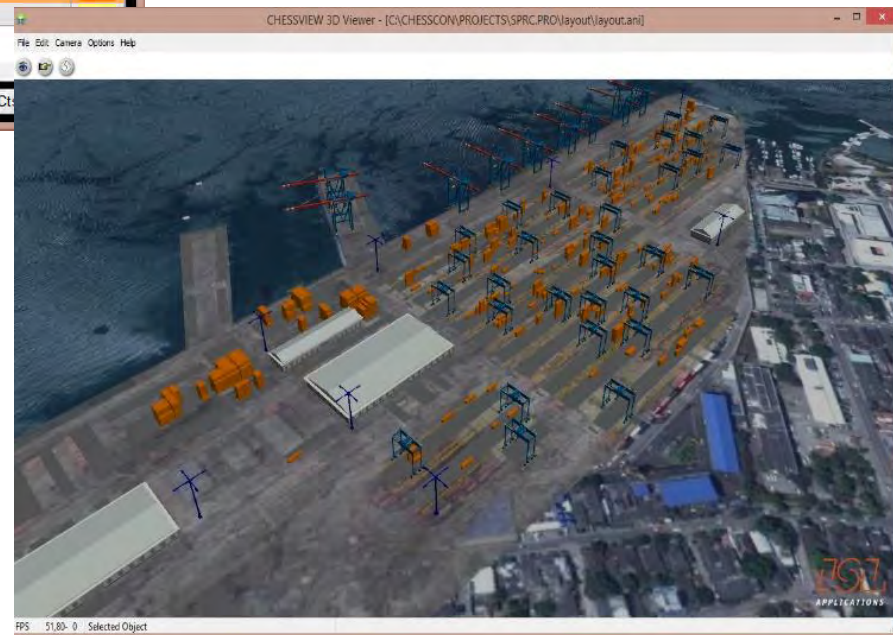
SOLUTION: CHESCON YARD VIEW

# EXAMPLES



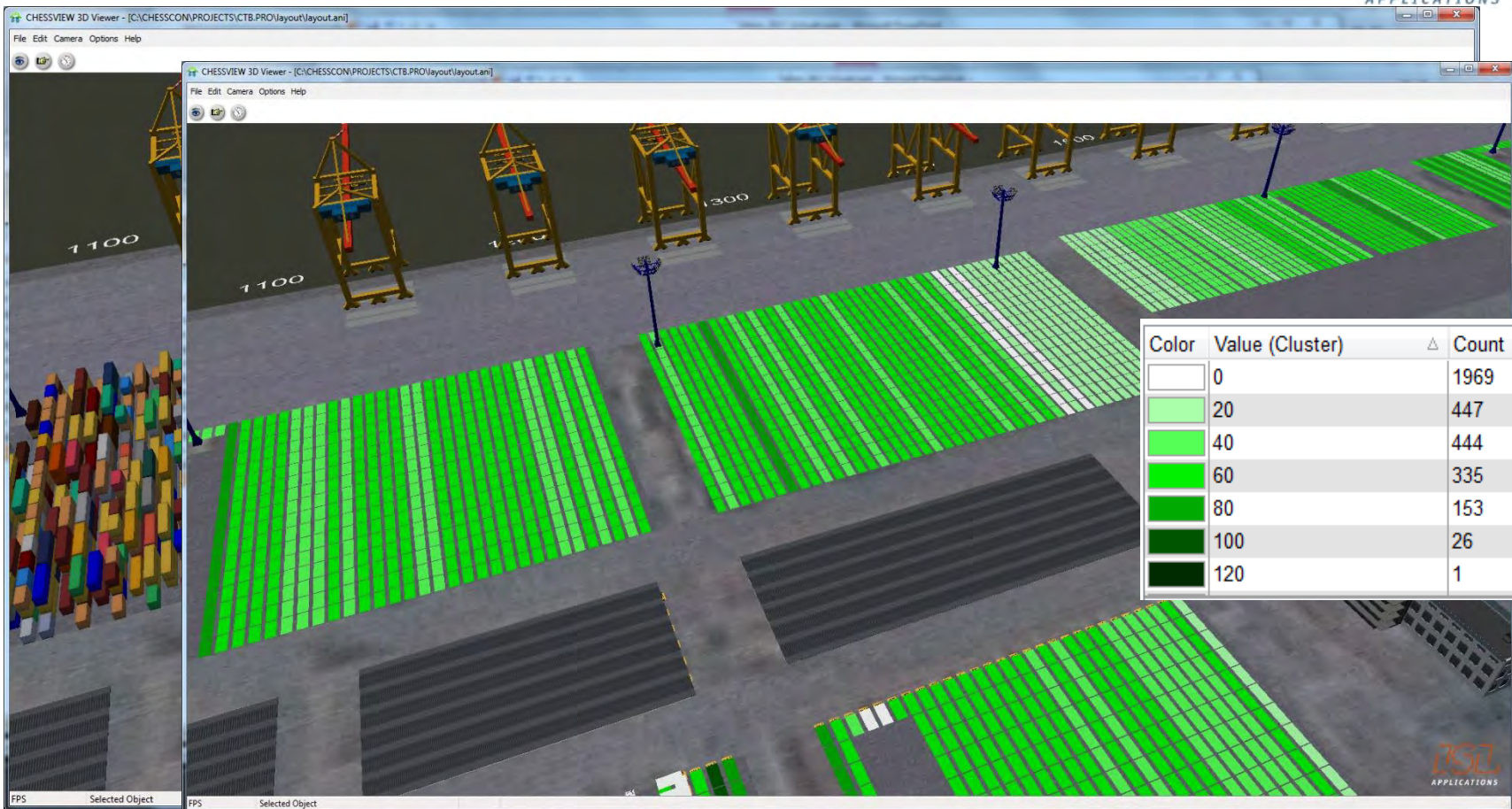
## RTG Terminal

- Prestow for the next vessel





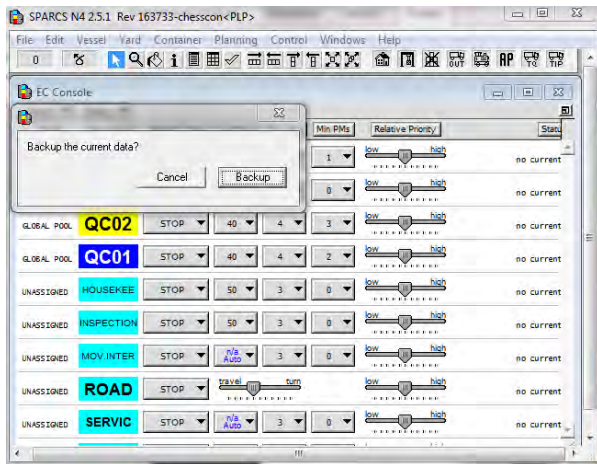
# EXAMPLES



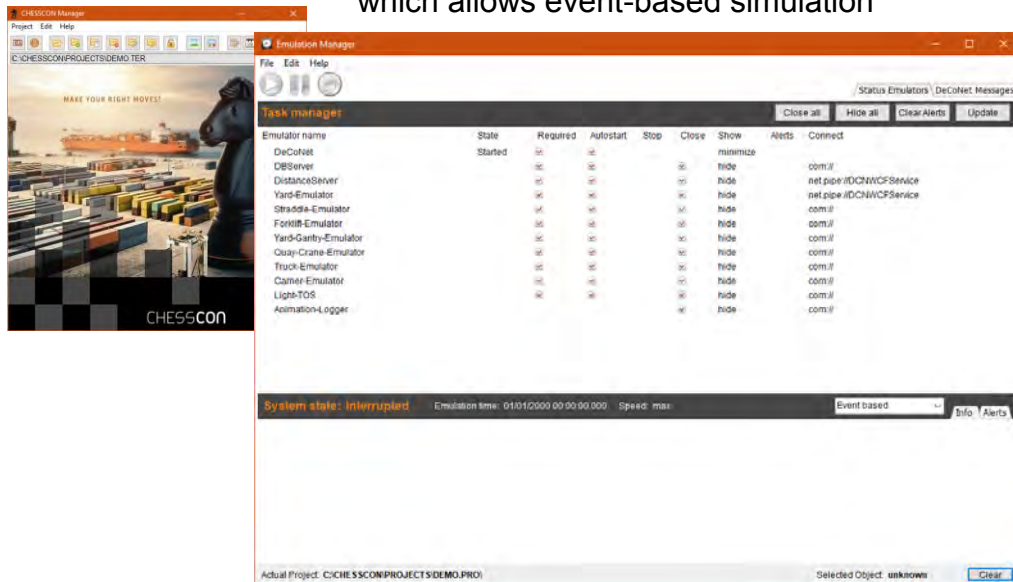
# CHESSCON SHIFT PREVIEW

After planning the next shift, but before starting the new shift

TOS



We are using a self developed “light TOS” which allows event-based simulation



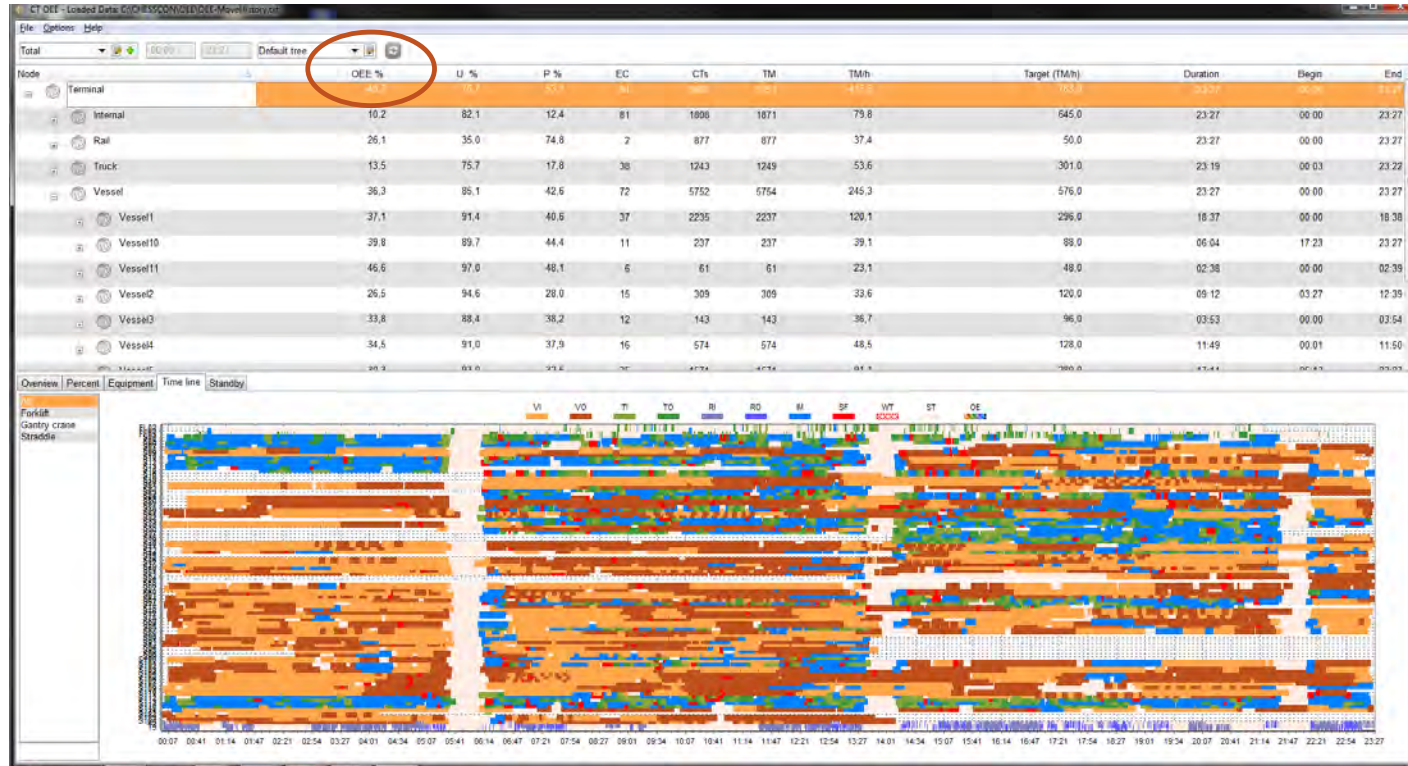
e.g. 1x Vessel 5x Quay cranes 25x Straddle Carrier  
1963 ct's real duration: **14:26 hours**  
Simulation duration: **30 secs**



Evaluation



# EVALUATION OF SHIFT PREVIEW



- OEE (Overall Equipment Effectiveness) = Utilisation x Performance (x Quality)



# CHESSCON SHIFT PREVIEW

## Advantages

- Easy to use
- Almost all required data imported from the TOS
- High Speed Simulation
  - About **1000** containers per minute





# CHESSCON SHIFT PREVIEW

## against CHESSCON Virtual Terminal Emulation

You can do the same with our Virtual Terminal Emulation

- Virtual Terminal Emulation
  - Same results as in real world
  - It takes time to prepare an emulation run
  - It takes time to run emulation (max. 5 times faster than real time)
  - approx. 4 hours for one shift ☹️
  
- SHIFT PREVIEW
  - Nearly same results as in real world
  - Runs without connection to the real TOS
  - Less than 5 minutes for one shift 😊





## CONCLUSION

- First of all: At which point you are standing now with your terminal?
- Rethink your operation with the support of an intelligent evaluation software to enhance operational processes
- Get more and more into a **proactive position**, check processes **before** they happen.
- Buying new equipment is necessary to stay competitive, but the use of an optimisation software requires only a fraction of the cost.

At least:

It's essential to rethink and renew your strategies at your terminal to stay competitive in a demanding market

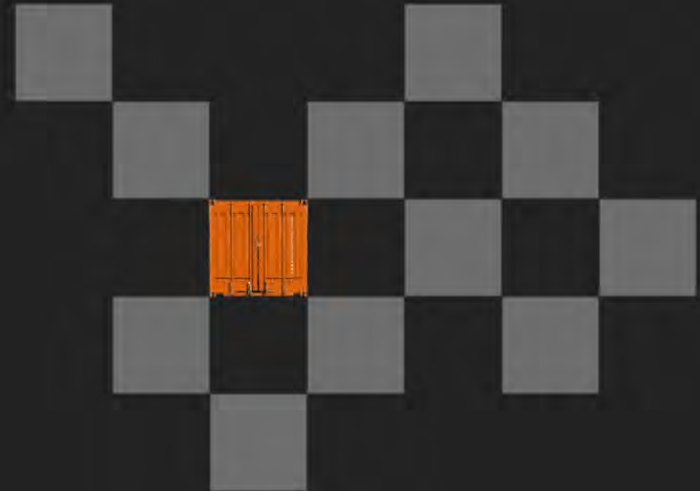
# THANK YOU FOR YOUR ATTENTION



**ISL APPLICATIONS GMBH**

Barkhausenstrasse 2  
27568 Bremerhaven  
Germany

P +49 471-30 98 38-38  
[www.isl-applications.com](http://www.isl-applications.com)



Anja Jablonski, Project Manager, ISL Applications GmbH, [jablonski@isl-applications.com](mailto:jablonski@isl-applications.com)