

# European case studies - get more out of existing resources



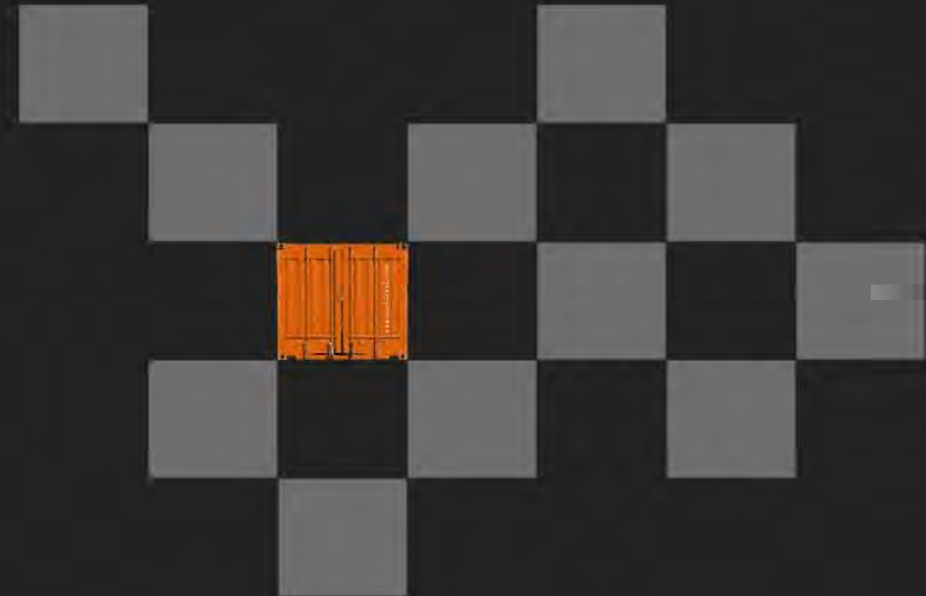
**Holger Schuett**

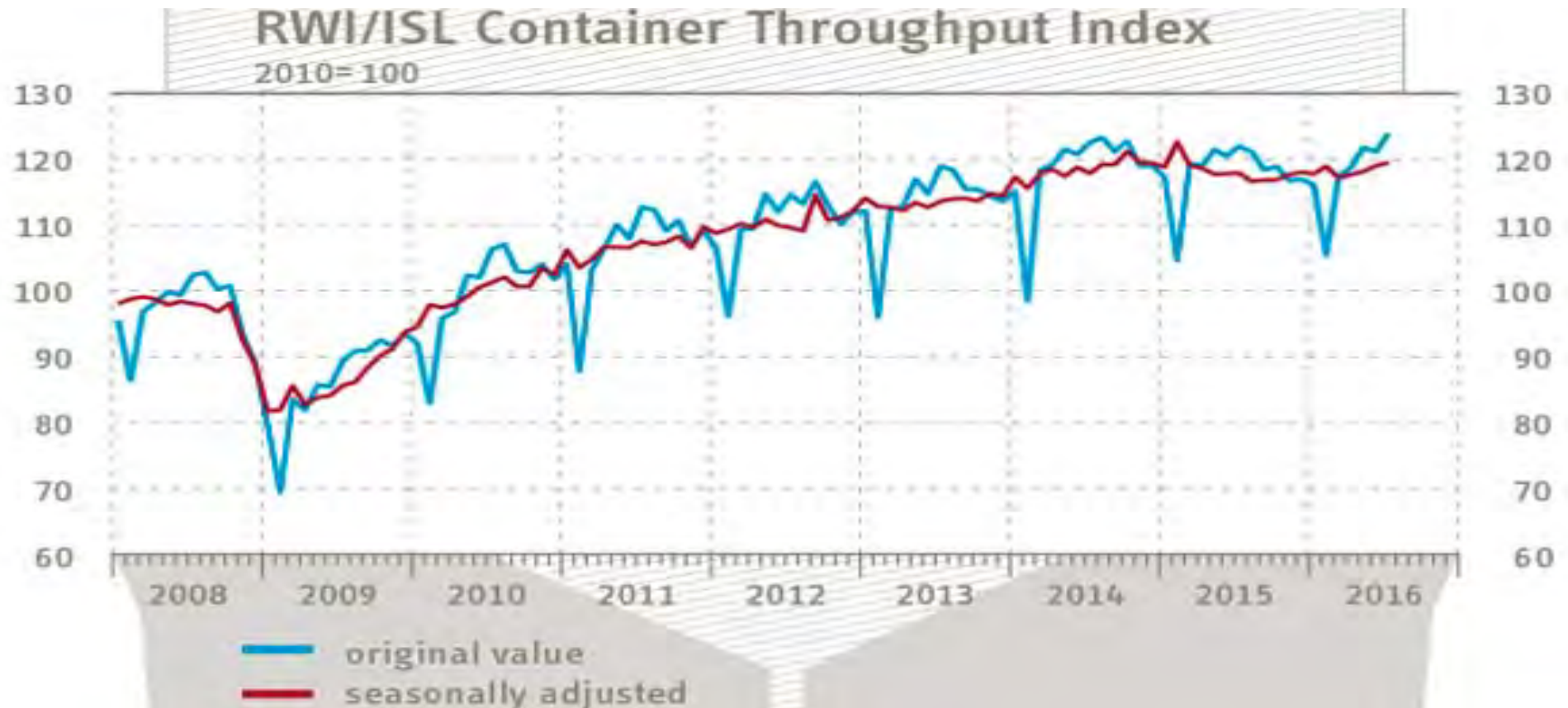
**ISL Applications GmbH**

Colombo International Maritime Conference – CIMC

11th South Asia, Ports Logistics & Shipping 2016

Colombo, September 21<sup>st</sup> – 23<sup>rd</sup> 2016





The Container Index has improved to 119.8 points in July from 119.3 (revised) in June. It confirms the upward trend of world trade illustrated by the Container Index since March 2016. It is now slightly below the level reached at the turn of the years 2014/15.

***RWI/ISL Container Throughput index***

- ***81 ports worldwide***
- ***~ 60 % of worlds throughput***
- ***available 6 weeks in new month***
- ***[www.isl.org](http://www.isl.org) → news***

# ISL Applications GmbH



**Founded 2010 as ISL's commercial subsidiary**



**Holger Schütt**  
CEO, Prof. Dr.- Ing.



**Horst-Dieter Kassl**  
CTO, Dipl.-Ing.

**ISL** – Institute of Shipping Economics and Logistics (R&D)

- founded 1954
- private foundation
- suited in Bremen & Bremerhaven
- some 45 employees
- research based consultancy institute in maritime logistics

# More than 25 Years Simulation Experience



Products rebranding:  
CAPS  
SCUSY  
ViTO



**CHESSCON**

## Optimisation and Simulation – References (selected)

ASEAN Terminals, Philippines

Bromma, Singapore

Centerm Terminal, Vancouver, Canada

CSX, Jacksonville, USA

DP World, Australia

EUROGATE, Germany

HHLA, Hamburg, Germany

HPA Hamburg Port Authority, Germany

HIT, Hong Kong

JadeWeserPort, Germany

Cargotec / Kalmar Industries, Finland

CMSA ICTSI, Manzanillo, Mexico

MCT, Gioia Tauro, Italy

MTL, Hong Kong

Noell Crane Systems, Germany

NTB, Bremerhaven, Germany

Port of Tacoma, USA

PORTEK International Ltd., Singapore

PSA International, Singapore

Red Sea Gateway Terminal, Jeddah, KSA

SPIA ICTSI, Columbia

Tata Consultancy Services, India

TecPlata ICTSI, Buenos Aires, Argentina

Terminal Investment Ltd, Netherlands

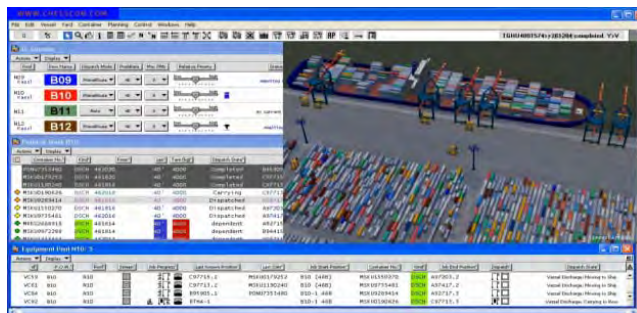
TotalSoftBank, Korea

TPT, South Africa

Warsteiner Brewery, Germany



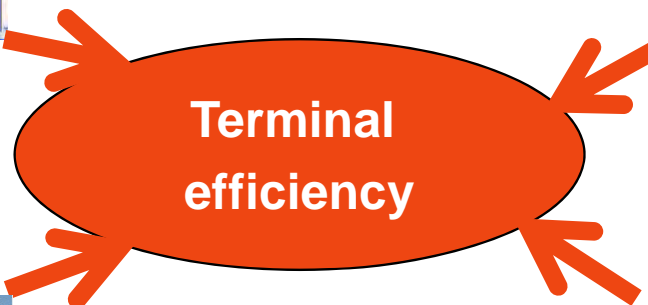
# How to improve terminal's efficiency



**TOS**  
Control system



**Process automation**



**Equipment**



The first ALV of KMI

**Terminal staff**



Terminal's productivity is driven by

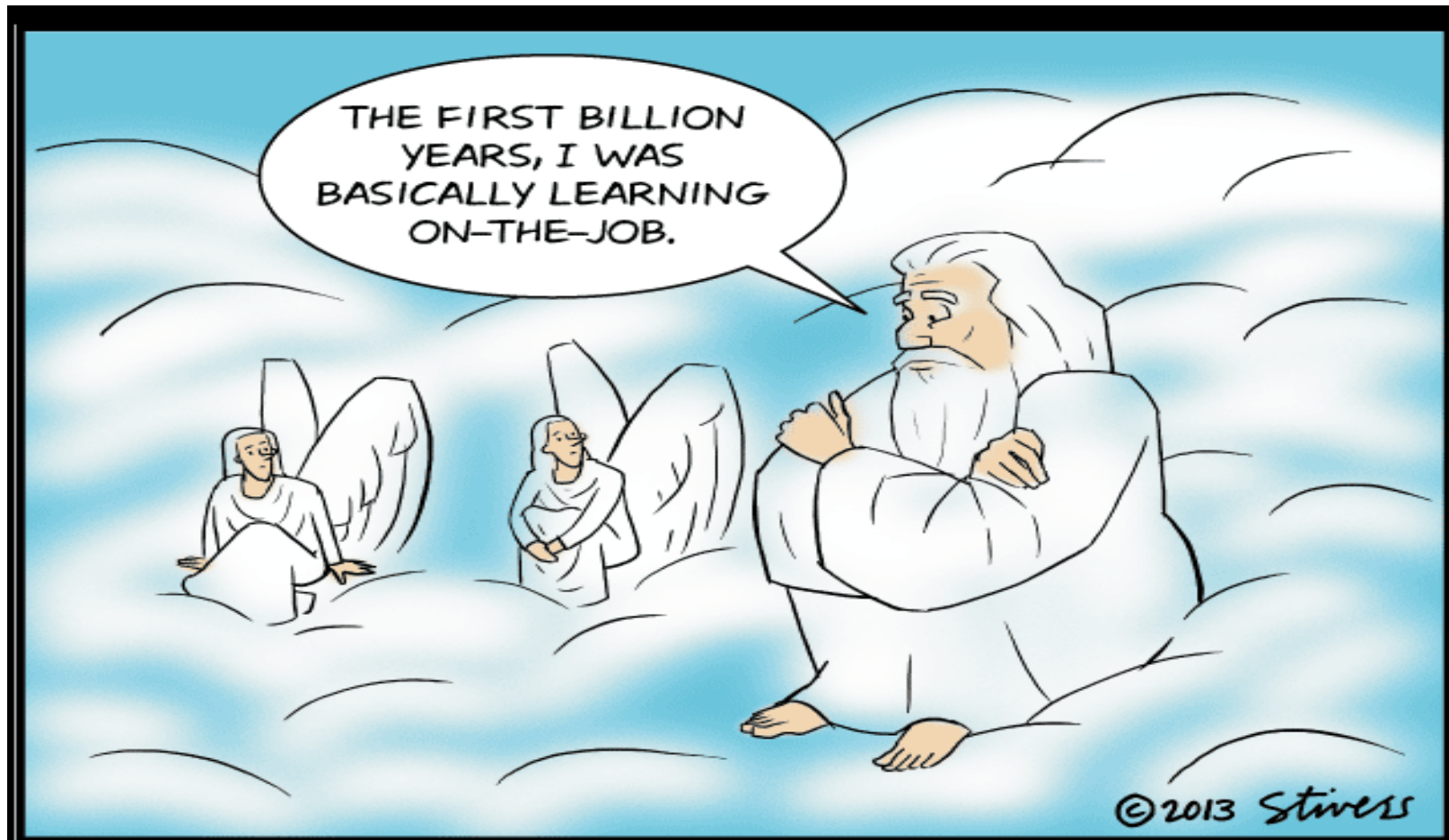
- The equipment
- The control system (TOS)
- The processes

Terminal Automation (processes as well as equipment) prepares for optimised operation, but more than ever very skilled control staff is required.

The last sentence within the Singapore Maritime Gallery (opened 09/2012):

**„ It is man making the difference“**

## Learning from the huge ones





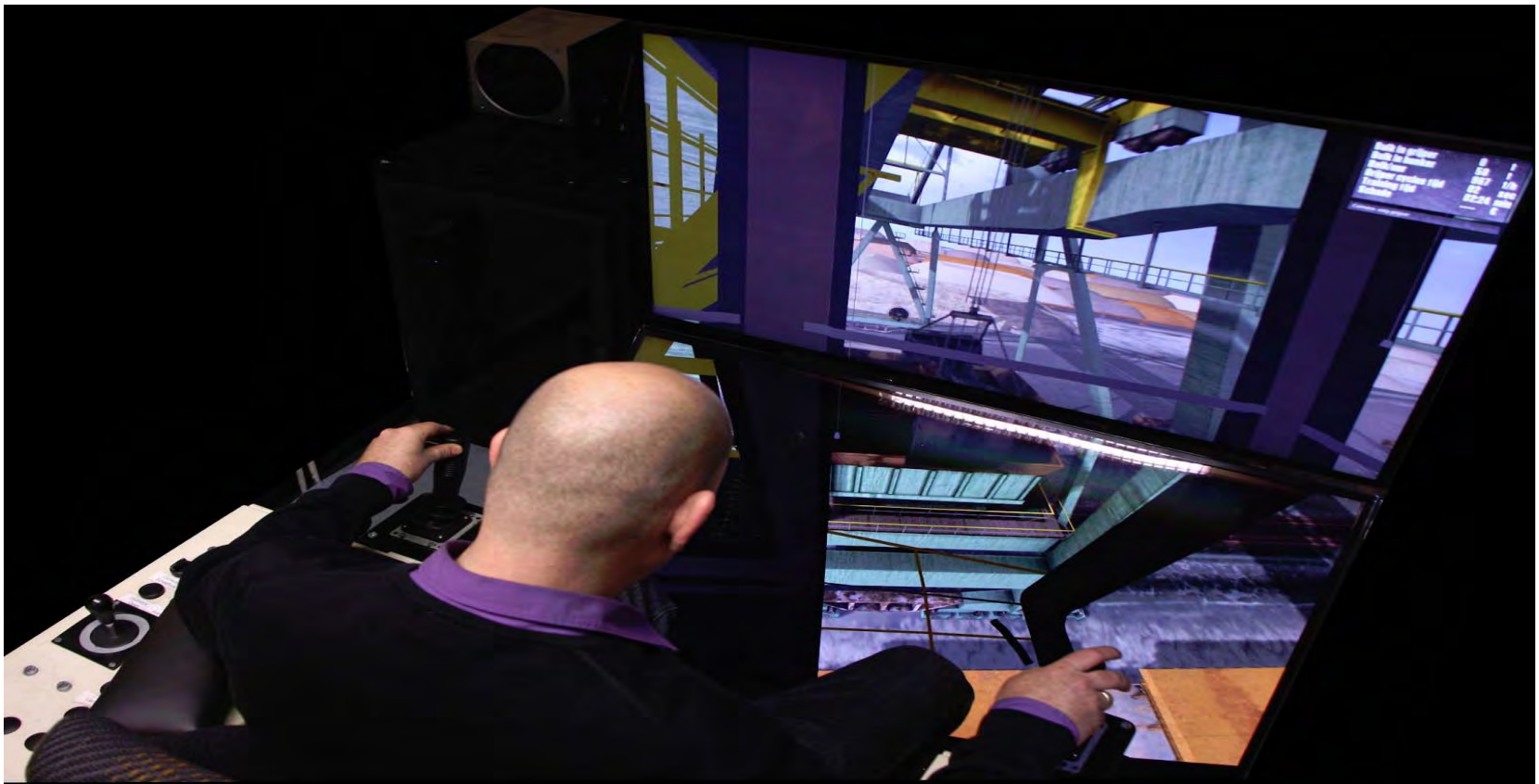
## Vessel simulator

- train your control staff (as shipping lines do)

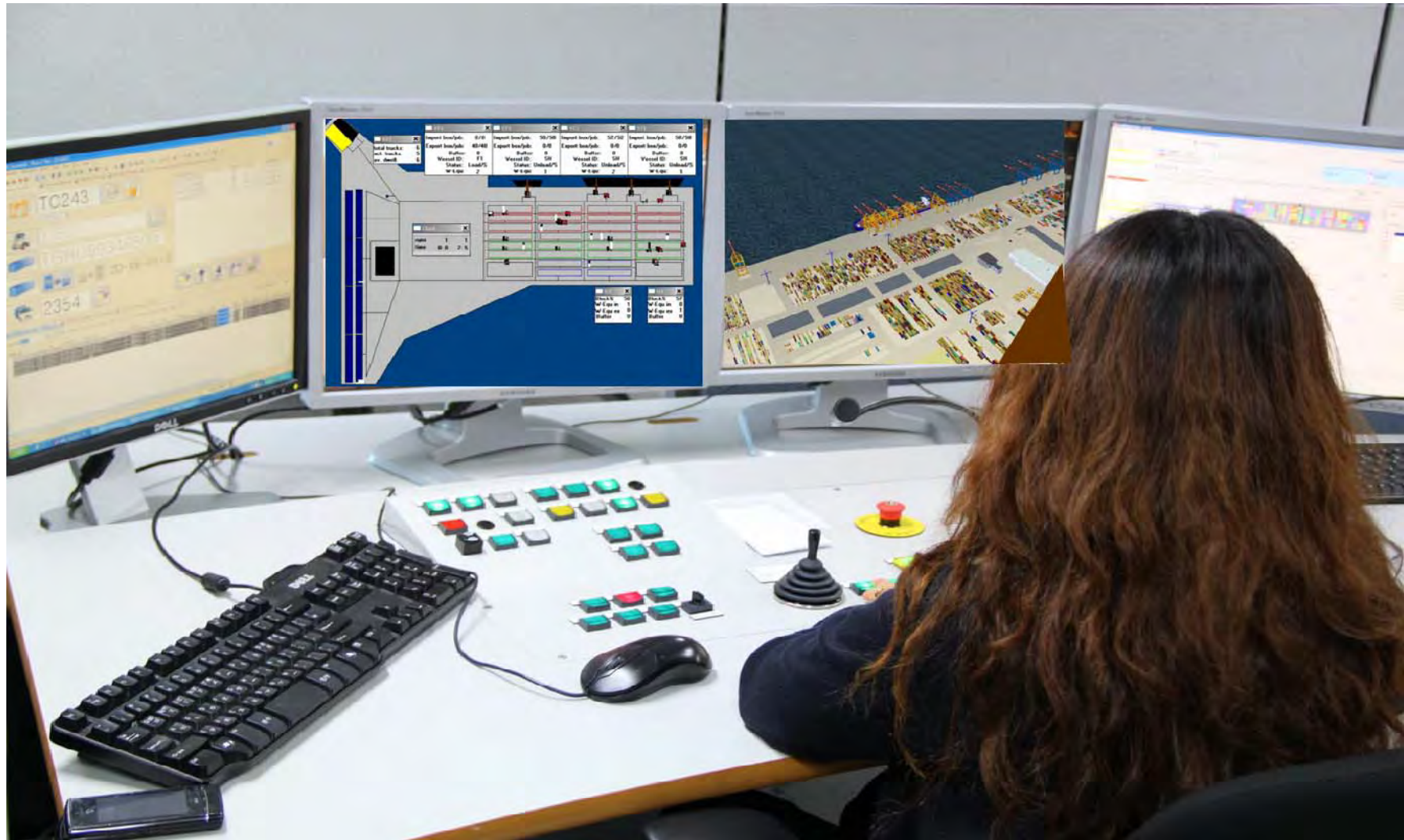


## Crane simulator

- train your control terminal staff (as you do with crane drivers)



# Learning from the huge ones



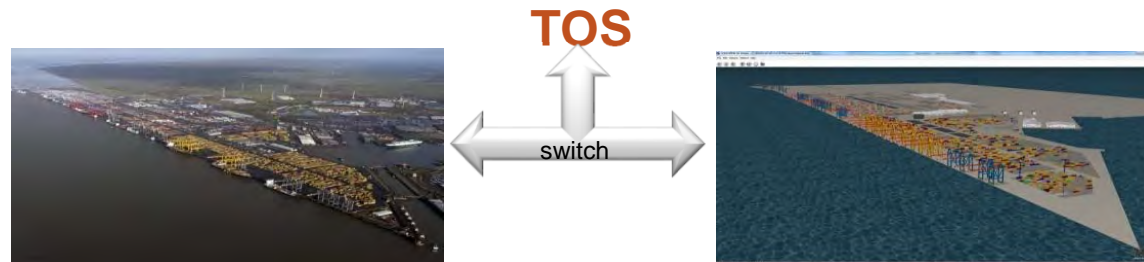


# The main mission of CHESSCON VIRTUAL TERMINAL

what you can do with CHESSCON

## Emulation:

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





**This is state of the art (at least at Greenfields)**

**→ But what are the next steps?**

# CHESSCON Shift Preview

**0 step:**  
day to day work  
use the TOS

**1 step:**  
shift planning finished

Pool	Pow Name	Dispatch Mode	PushRate	Max PMs	Relative Priority	Status
MOB1	MOB1	STOP	40	20	low	no current shift
SK30	SK30	STOP	40	8	low	no current shift
N01	B01	STOP	40	8	low	no current shift
N02	B02	STOP	40	8	low	no current shift
N03	B03	STOP	40	8	low	no current shift
N04	B04	STOP	40	8	low	no current shift
N05	B05	STOP	40	8	low	no current shift
N06	B06	STOP	40	8	low	no current shift
N07	B07	STOP	40	8	low	no current shift
N08	B08	STOP	40	8	low	no current shift
N09	B09	Manual	40	8	low	0,0 30,0
N10	B10	Manual	40	8	low	0,0 30,0
N11	B11	STOP	40	8	low	no current shift

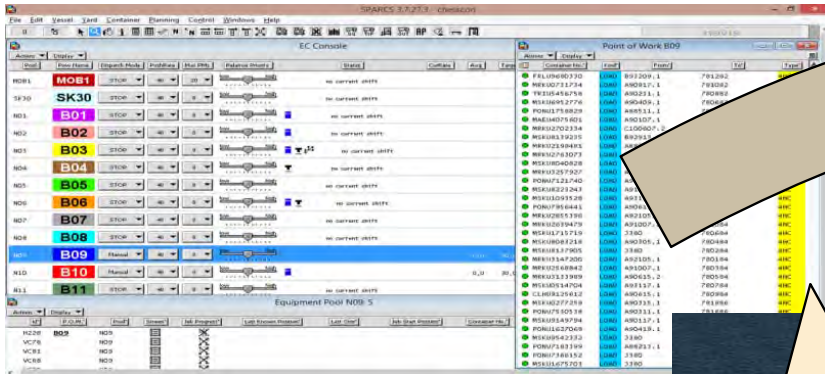
id	P.O.W.	Pool	Screen	Job Progress	Last Known Position	Last Cntr	Job Start Position	Container No.
H228	B09	N09						
VC78		N09						
VC81		N09						
VC88		N09						

MRKU3257927	LOAD	A93117.3	782284	4HC
PONU7121740	LOAD	A92105.3	782084	4HC
MSKU8223243	LOAD	A91007.3	781884	4HC
MSKU1093528	LOAD	A93117.2	781684	4HC
PONU7956441	LOAD	A90615.3	781484	4HC
MRKU2855396	LOAD	A92105.2	781284	4HC
MRKU2639479	LOAD	A91007.2	781084	4HC
MSKU1715719	LOAD	J380	780684	4HC
MSKU8083218	LOAD	A90305.1	780484	4HC
MSKU8137905	LOAD	J380	780284	4HC
MRKU3147200	LOAD	A92105.1	780184	4HC
MRKU2568842	LOAD	A91007.1	780384	4HC
MRKU3133989	LOAD	A90615.2	780584	4HC
MSKU0514704	LOAD	A93117.1	780784	4HC
CLHU9125612	LOAD	A90615.1	780984	4HC
MSKU0277259	LOAD	A90315.1	781886	4HC
PONU7530538	LOAD	A90311.1	781686	4HC
MSKU9149794	LOAD	A90117.1	781486	4HC
PONU1627069	LOAD	A90419.1	781286	4DC
MSKU9542332	LOAD	J380	781086	4HC
PONU7183399	LOAD	A88213.1	780886	4HC
PONU7366152	LOAD	J380	780686	4HC
MSKU1675703	LOAD	J380	780486	4HC

# CHESSCON Shift Preview

ISL



2nd step:  
Import planning state  
automatically



ample of based data

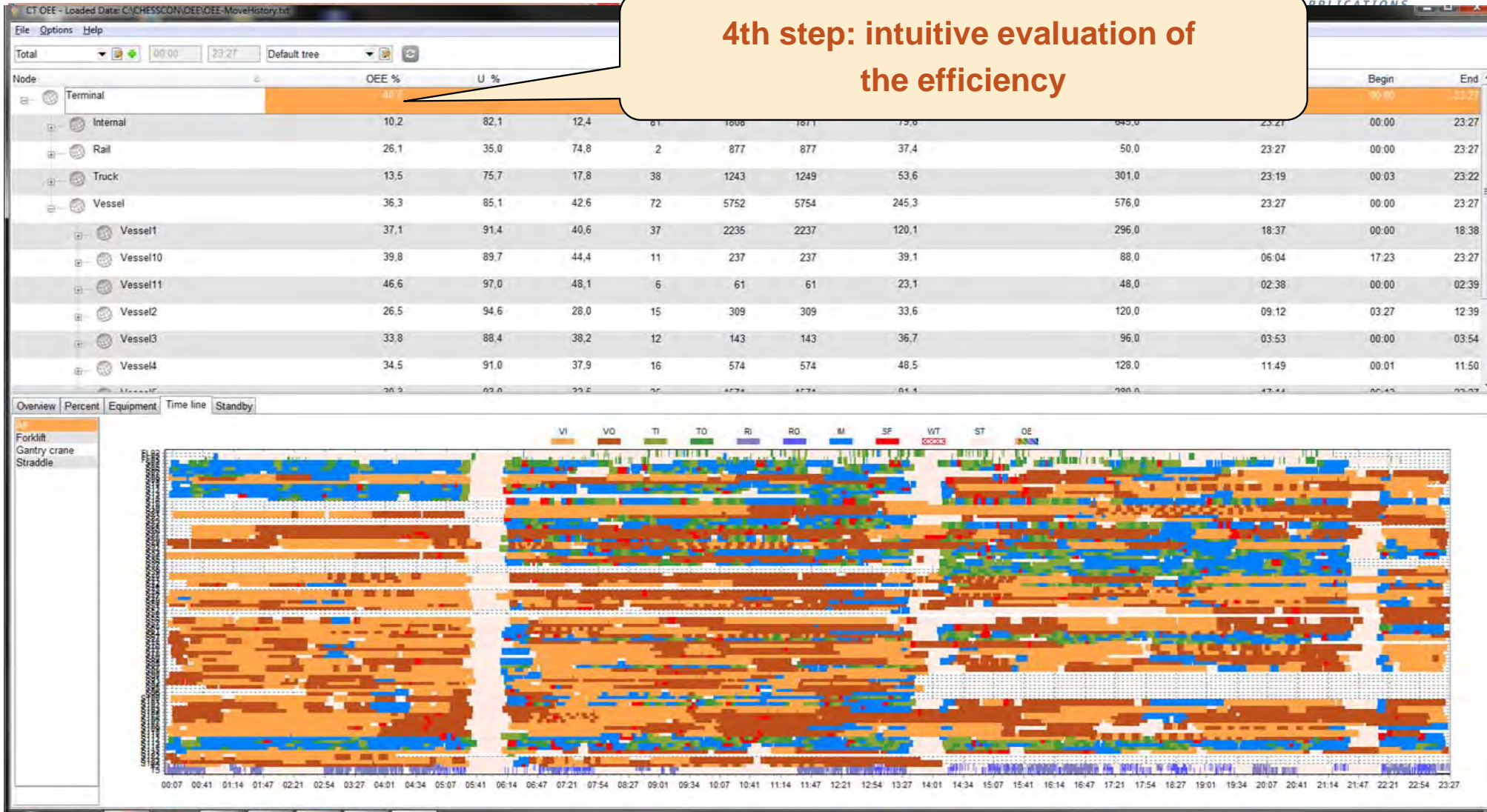




# CHESSCON Shift Preview



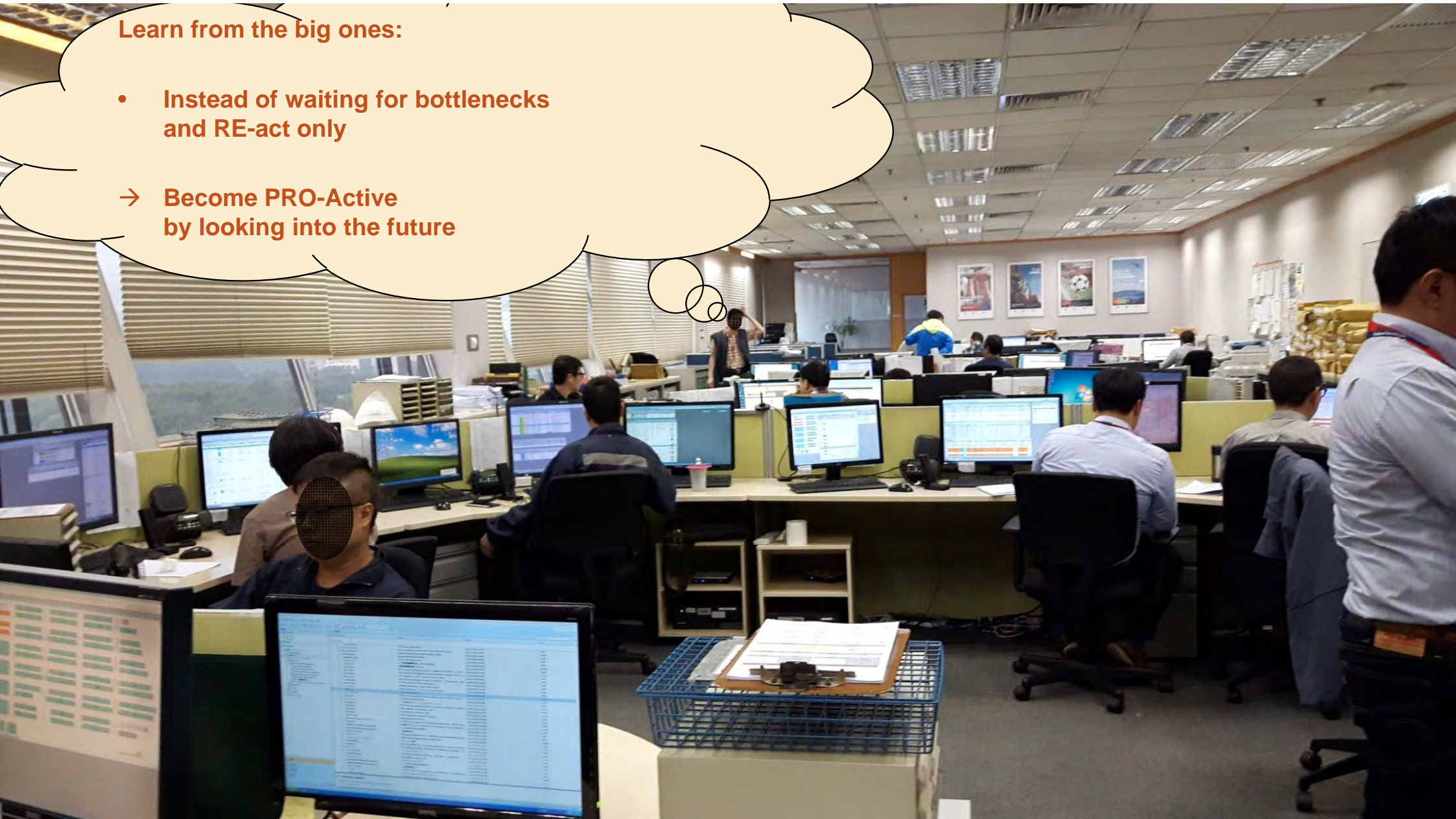
4th step: intuitive evaluation of the efficiency





Learn from the big ones:

- Instead of waiting for bottlenecks and RE-act only
- Become PRO-Active by looking into the future





## Cites from NTB – North Sea Terminal Bremerhaven



*a joint venture of APM Terminals and the Eurogate group*

- **CHESSCON Shift Preview was developed out of our demands for a fast simulation of the current state of shift planning.**
- **Together we (NTB) and ISL Applications GmbH defined a module, which is based on operational as well as IT expertise.**
- **The result is easy to use and supports short term optimisation of the day-to-day shift planning.**

### **Why Shift Preview ?**

**→ Terminals,**

**which today are not in the position to analyse their operation predictively,  
are living yesterday**

***Marc Dieterich, Operations Manager at NTB***

## Conclusion

**Instead of investing in more and more man and machines:**

***Get more out of your existing resources***



MAKE YOUR RIGHT MOVES!



[WWW.CHESSCON.COM](http://WWW.CHESSCON.COM)

**CHESSCON**  
VIRTUAL TERMINAL



**I'm looking forward to the following discussion!**

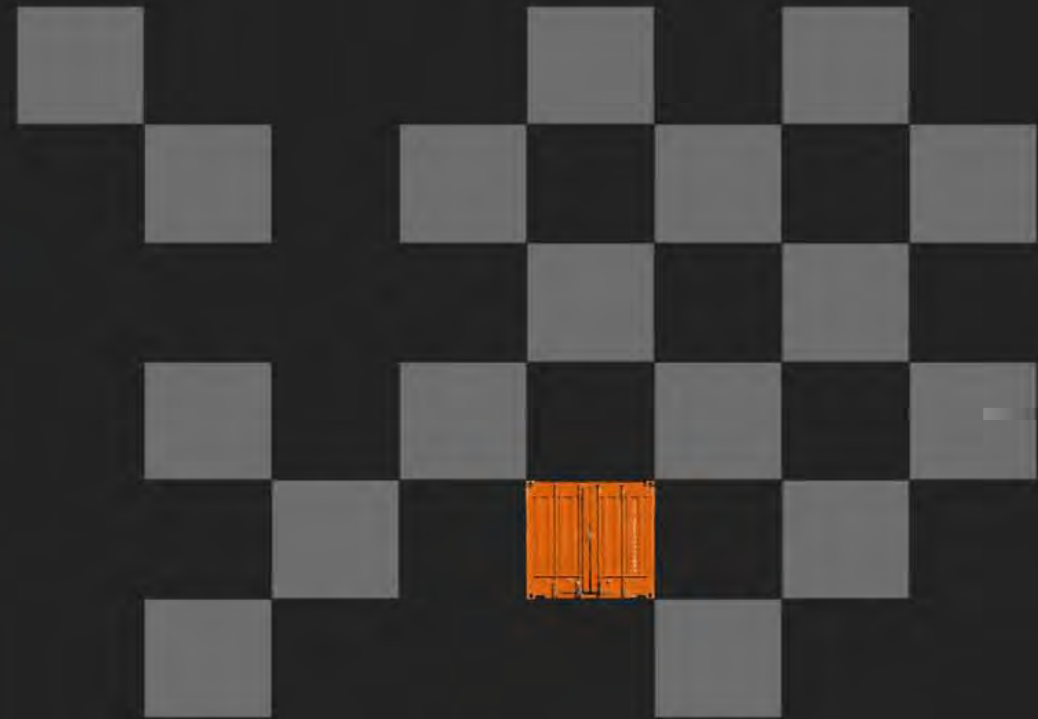
**Holger Schuett, Prof. Dr.-Ing., CEO**



**ISL APPLICATIONS GMBH**

Barkhausenstrasse 2  
27568 Bremerhaven  
Germany

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



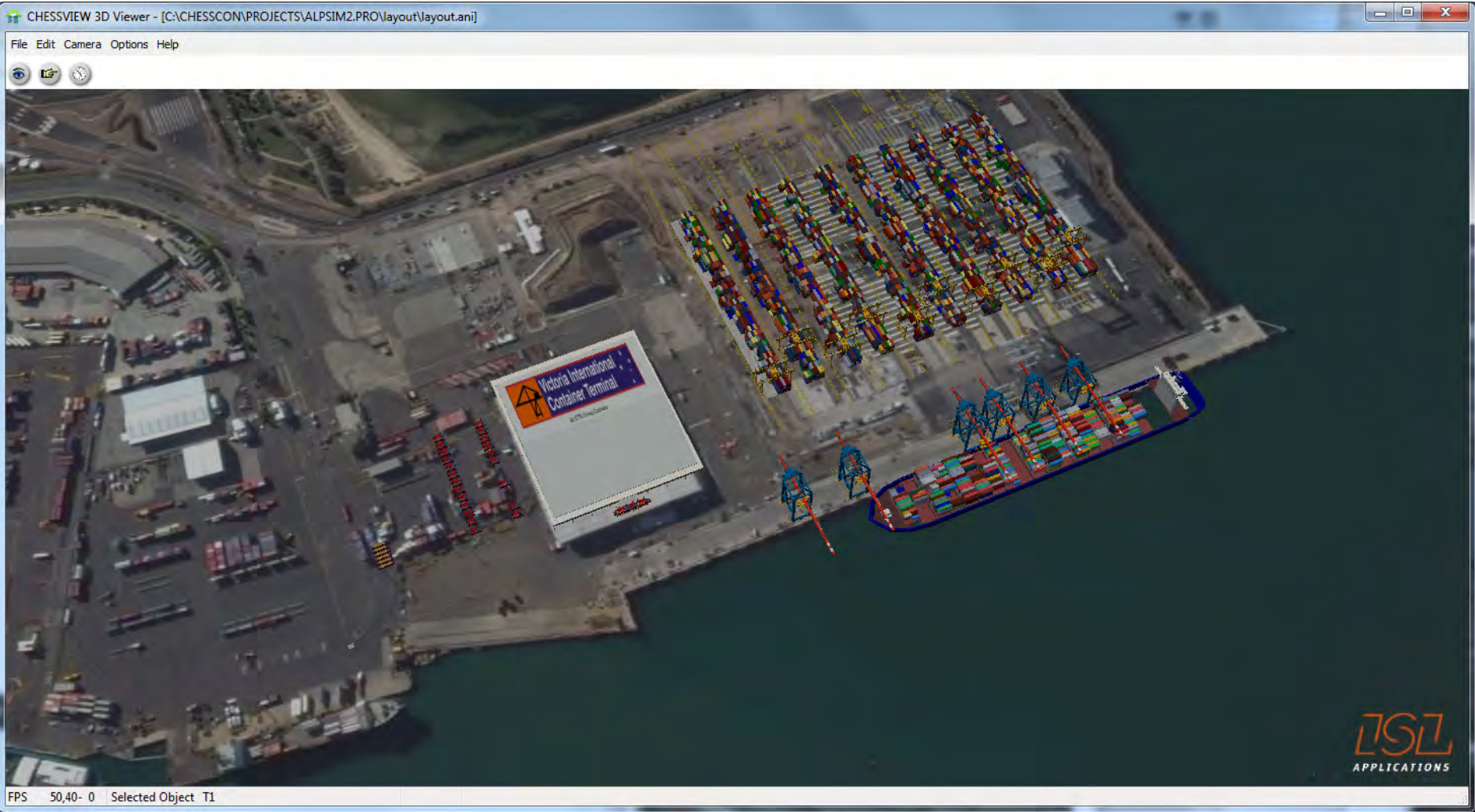
## Bromma's ALP

How to plan the vessel operation using several ALPs?

→ When transporting the ALPs from crane to crane?



# ALP emulator





# AOS calculating the utilisations



< Detail lashing platform

Logged in as user.

ALP 1

VESSEL NAME: ILS009

CRANE NAME:

DISCHARGING\_DECK

Activate Transport Mode

5% FUEL

2.6 V BATTERY

MAGAZIN 1/2: 81

MAGAZIN 3/4: 11 MAGAZIN 5/6: 11

MAGAZIN 7/8: 81

	1	81	11	3	5	11	81	7
	1	1	3/5	3/5	7	1		
	2	2	4/6	4/6	8	8		
	2	81	11	4	6	11	81	8



TYPE 3



TYPE 2



TYPE 3

ERROR TABLE

Severity	Error Description	Manipulator	State

TWIST LOCKS PER MAGAZINE

RAIL	TWL-TYPE	VESSEL	AMOUNT
1	3		10
2	3		10
3	2		10
4	3		10
5	3		10
6	2		1
7	3		10
8	3		10
9	3		10
10	3		10
11	3		1
12	3		0
13	3		0
14	3		0

ALP 3

DISCHARGING\_HOLD

ILS009

/2	3/4	5/6	7/8	BATTERY
4	0	0	94	
3	3	3	3	FUEL

ALP 6

OFFLINE

/2	3/4	5/6	7/8	BATTERY
-1	-1	-1	-1	
-1	-1	-1	-1	FUEL



# AOS forecasting the operation

