



Crane simulators to increase port productivity and safety.

LIEBHERR

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LIEBHERR – a family business

Company founded in 1949 by Dr.-
Ink. E.h. Hans Liebherr

> €9 billion turnover (2013), 39,670 employees
130 companies worldwide.

> €800 million invested into new developments (per year)



Port Equipment – Ship to shores



Port Equipment – Ship to shores & RTG



Port Equipment – Mobile Harbour Cranes



Port Equipment – Mobile Harbour Cranes

Republic of South Africa



Port Equipment – Ship Cranes



Port Equipment – Material Handling Equipment



Port Equipment – Straddle Carriers



Port Equipment – Reachstackers



LIEBHERR Werk Nenzing – AUSTRIA

Founded 1976
>1700 employees

EXPANSION 2014

New office building



LIEBHERR Rostock – GERMANY



EXPANSION 2015

New production plant

Founded 2005
>1200 employes



LIEBHERR Killarney – IRELAND



New production plant

production capacity x2

Founded 1958
>630 employes



Shipping and port industry – Port Challenges

Increasing of container and cargo volume

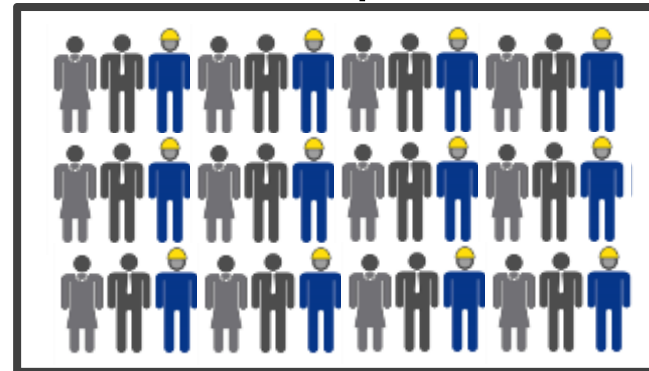
We must find clever ways to improve the productivity level

Equipment



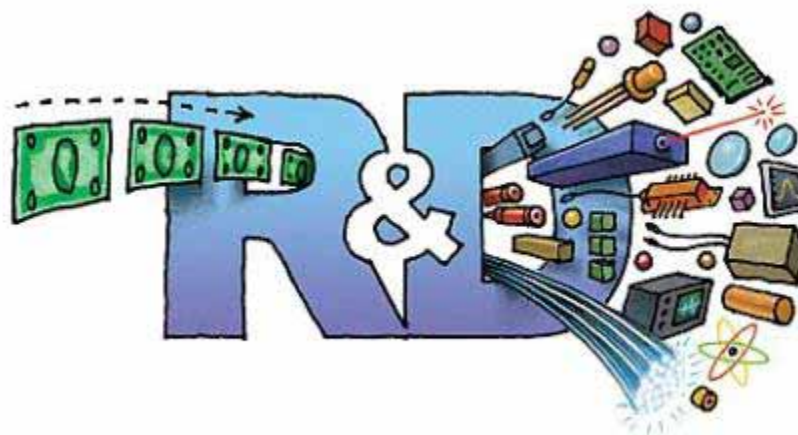
&

People



Equipment productivity – Innovation

Innovation



Smart Grip®

Grab optimization



Cycloptronic®

Anti sway system



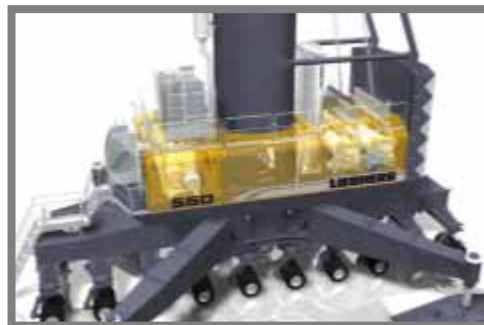
Teach-In®

Semi Automatisaton



Pactronic®

Energy accumulator



Sycratronic®

Tandem heavy lift



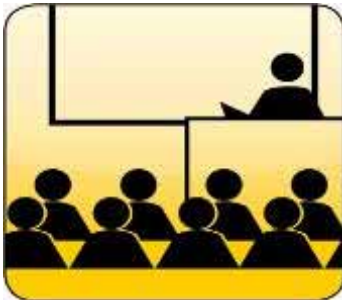
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People productivity – Education/Training

Education



Training center



Training on site



Simulator training



Need a new level of realism
and efficiency

LiSIM Liebherr Simulator – Advanced training

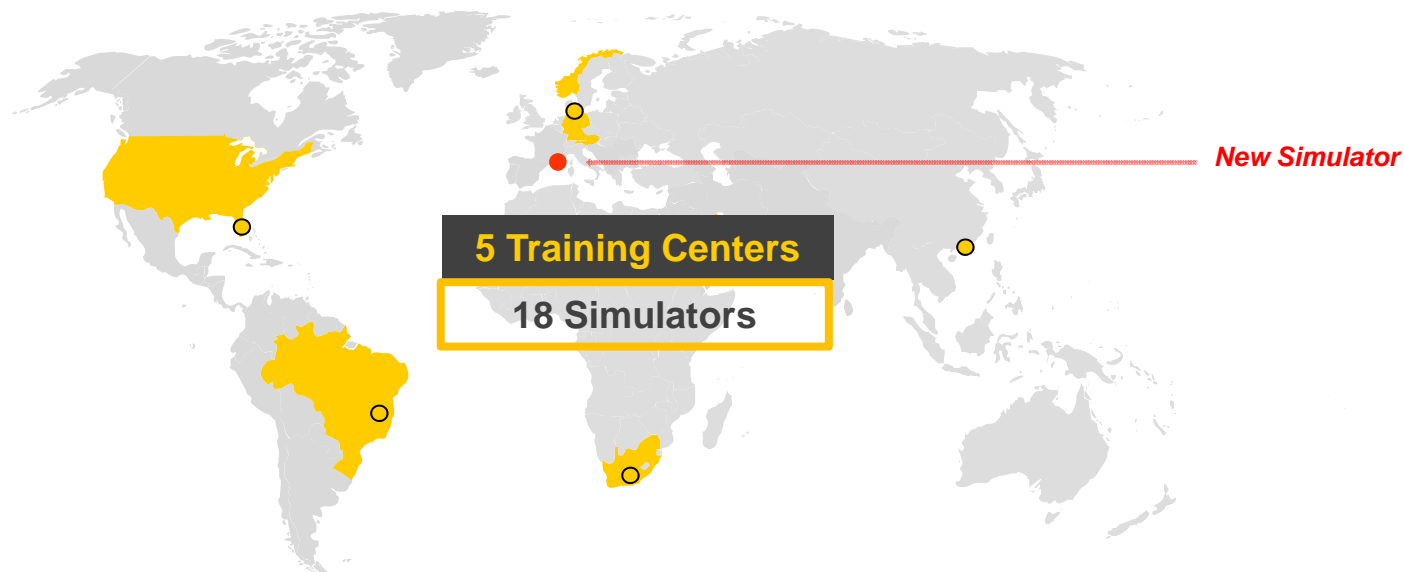
Classroom



Cabin



Container



Copyright Liebherr 2008

Solutions – classroom

Fit a training center

High definition flat
screen monitor

Sonore effects

Motions platforms
and engines



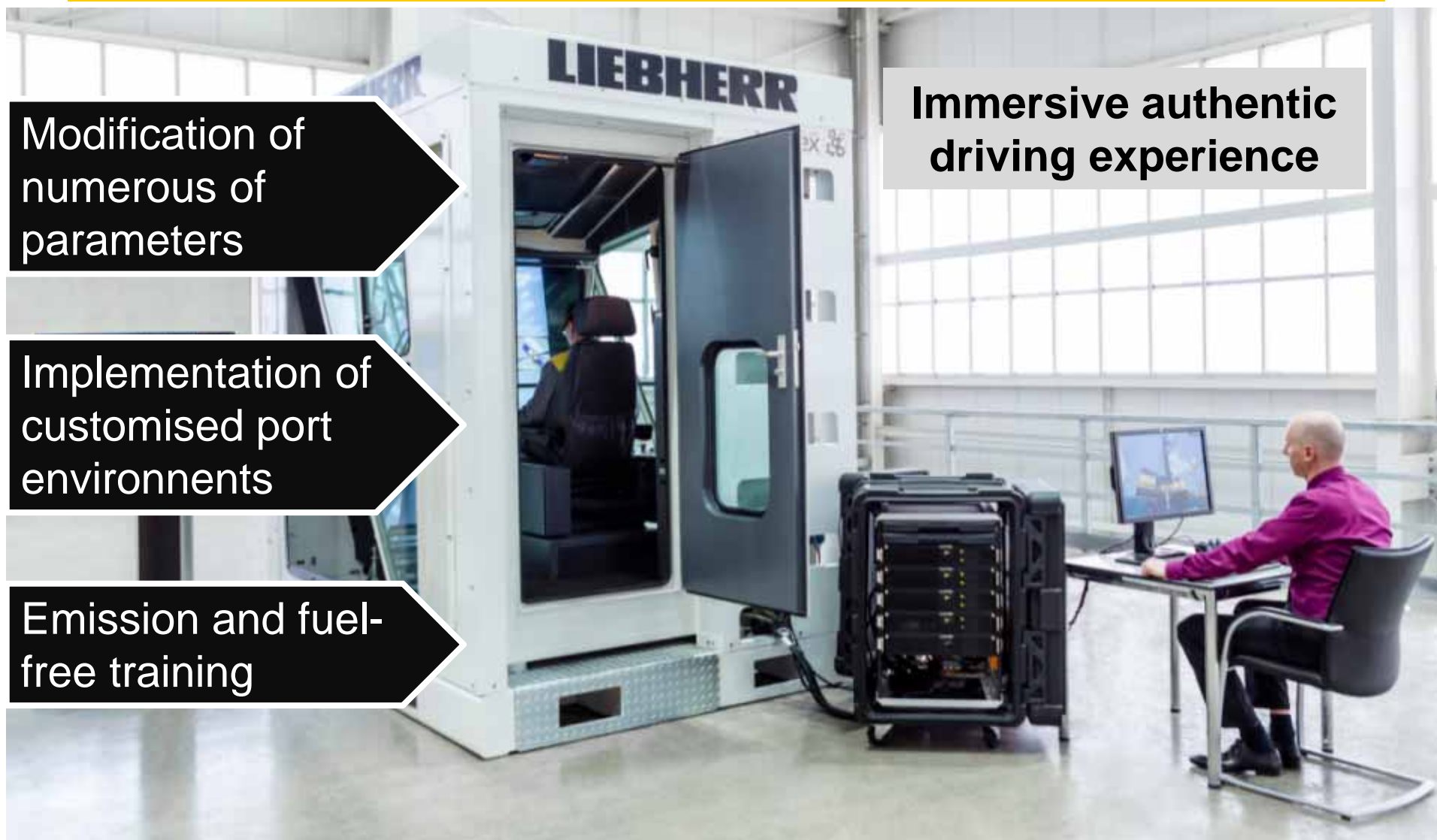
Solutions – Cabin

Modification of
numerous of
parameters

Implementation of
customised port
environnents

Emission and fuel-
free training

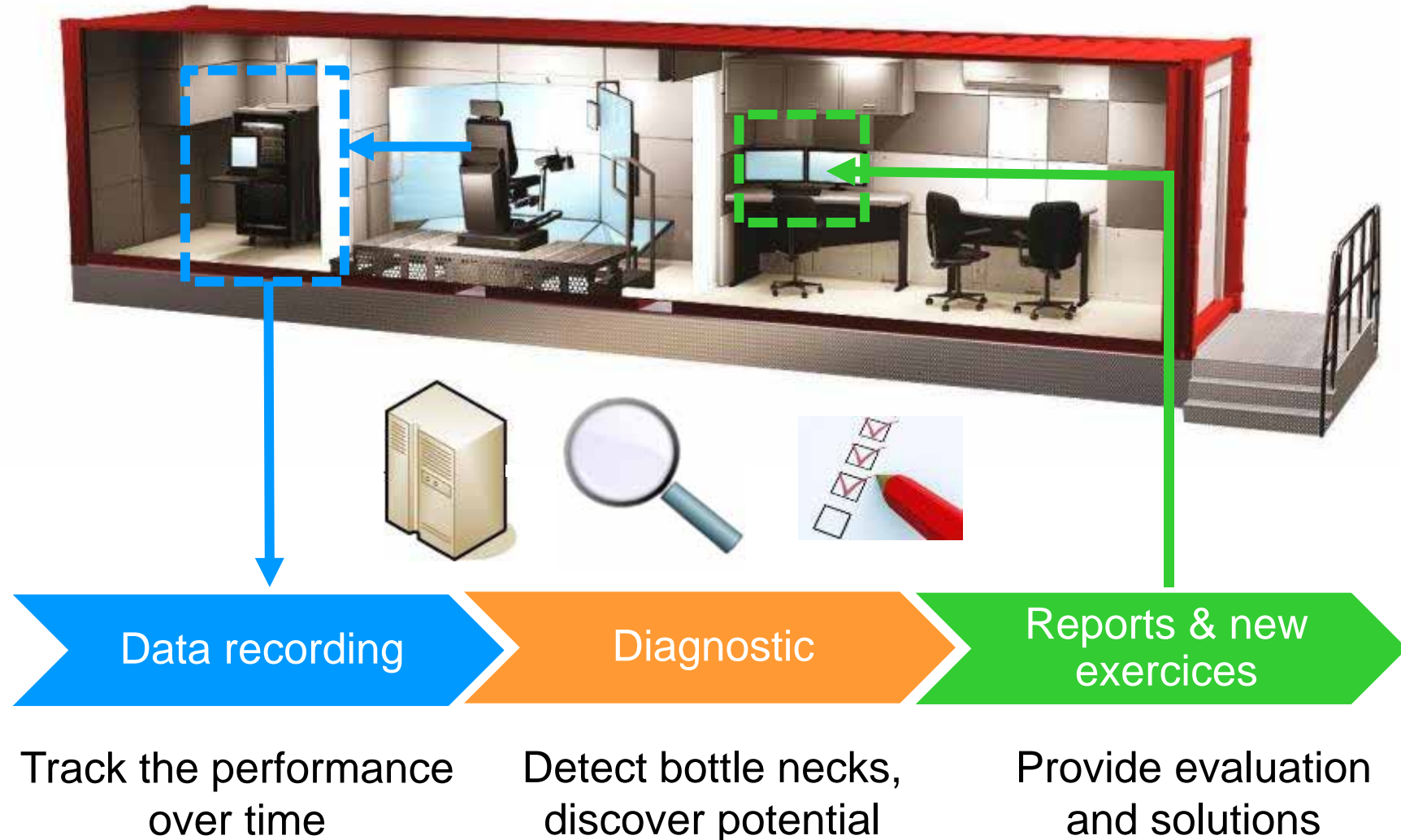
Immersive authentic
driving experience



Solutions – Container.



Track performance – Evaluating the progression



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Safety– with LiSIM®



Training with Simulator:

- ❑ No injuries to port personnel
- ❑ No equipment damage
- ❑ Does not interfere with operation
- ❑ Simulate challenging environmental conditions
- ❑ Teach them how to react to unexpected situations

Refresh drivers skills



Buenos Aires, April 29th 2013.

To whom it may concern:

With this letter, TECONDI Terminal para Contenedores de Mar del Plata S.A. is pleased to provide a reference for LIEBHERR for the outstanding support they have been giving us during the training program for our mobile cranes' operators, with The Lullaby Crane Simulators.

The crane's productivity in our Terminal, after the one-week training course for each group of operators and stay placement, has been increased from 43.82 tph in 2012 to 49.54 tph in 2013, 13%.

The numbers of the first four months of 2013 show the improvement in our efficiency:

Month	2012 (tph)	2013 (tph)
JANUARY	43.82	49.54
FEBRUARY	43.82	49.54
MARCH	43.82	49.54
APRIL	43.82	49.54

The increasing in the productivity was also followed by a reduction of damages of cargo and it is due to change in TECONDI's management processes and the cranes' operators training course developed at the LIEBHERR Training Center in Guernseyville which we highly recommend.

Sincerely,

 Alejandro Alvarado
 General Manager

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13% more turnover

LIEBHERR

Thank you for your attention

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