LiDAT® smartApp Maritime Technology

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Presentation outline

- Challenge

- Solution

- Features & benefits

- Summary

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Challenge

- **Information level**
  - Numbers are everywhere in our lives, and statistics is about turning these numbers into useful information on which we can take action
  - Properly represented data are more than just numbers (trends, anomalies, etc…)
  - Getting the right information at the right time is the key to act on a process level

- **Big data analysis**
  - To create benefits for our customers data have to be available on demand
  - Today's question is not amount of data, but how to gain something useful out of it
  - The art is to break down numbers to key performance indicators (KPIs)
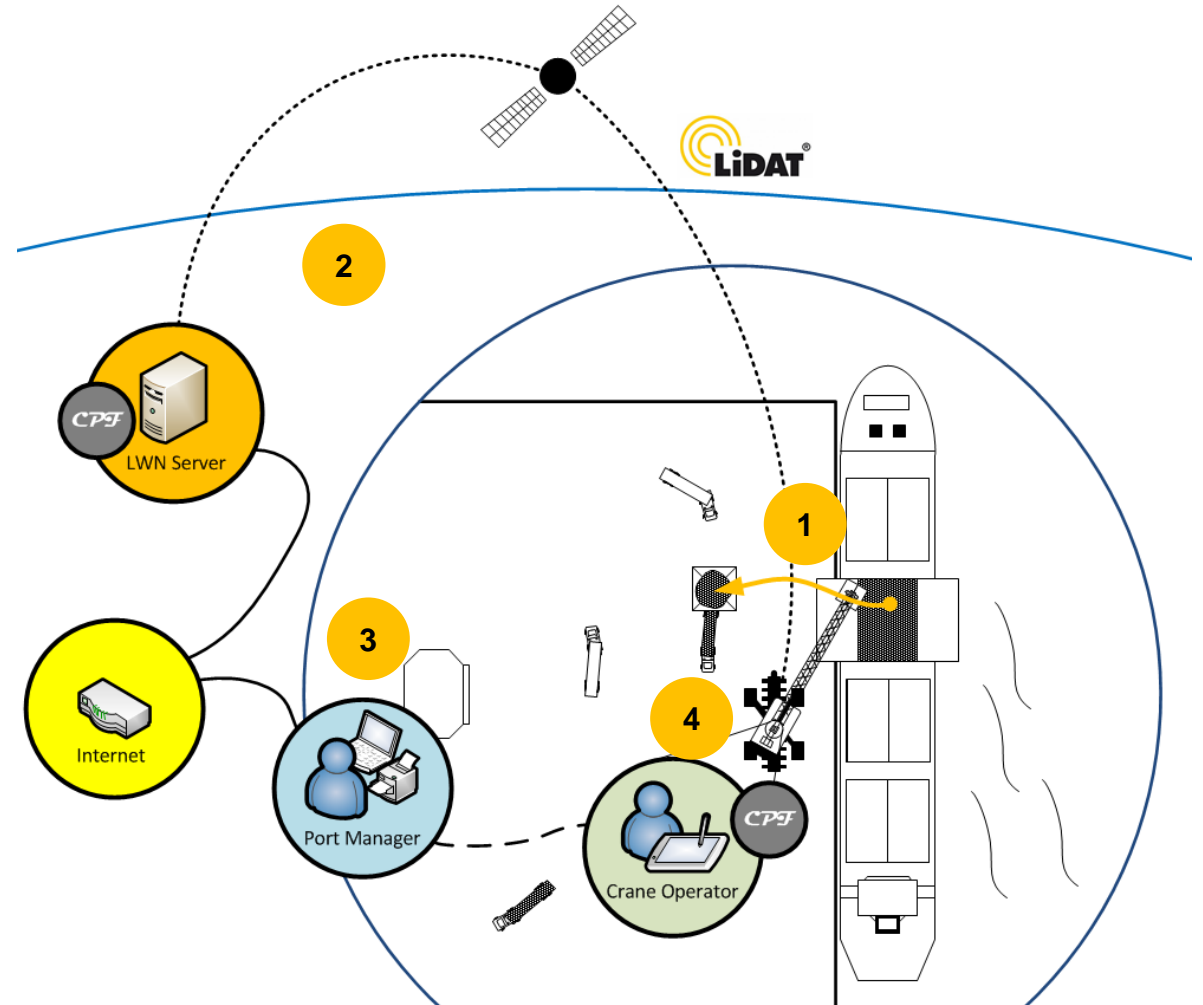
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Solution: LiDAT® smartApp

- **Optimise your performance with big data analytics**
- Big data analytics examines large amounts of data to uncover hidden trends, anomalies and other insights
- With LiDAT® smartApp, it's possible to analyse your crane (operating and performance) data and get answers from it almost immediately
- That leads to immediate decisions. The ability to work faster gives ports a competitive edge they didn't have before
- Big data analytics helps to detect bottle necks and to identify new opportunities

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Solution: LiDAT® smartApp

- **How it works**

1. The online work cycle detection on the crane records specific values during the crane operation

2. Process data are transmitted in real time to the LiDAT® server centre, where the analysis is taking place.

3. With LiDAT® smartApp all relevant data/variables are displayed as key performance indicators (KPIs) on any device (PC, tablet, smartphone, …).

4. The result of the analysis can be fed back to the crane/driver via LiDAT®. The results are shown on the operators display.

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Modular concept:

LiDAT® smartApp

- **smartApp basic:**

  Machine Data:

  Current Location, Dataset and Environment

  Process Data (Scenario)

  General Information (machines, location handled cargo, operation hours, data coverage)

  Operation KPIs (Handled Cargo, Performance, Cycle Time, Wind Speed)

  Machine Reports

  Dashboard Report (Location, Environment, and Dataset)

  Machine Use

  Machine Logbook

  Safety Report

  Process Data Report (Scenario)

  General Information, Operation, Data Coverage, Handled Cargo, Operating Hours, Operation Mode, Performance, Wind Speed, Cycle Time

- **smartApp maintenance:**

  Machine Data:

  Current Operating Hours and Resources

  Process Data (Scenario)

  Machine Health (filling levels, temperatures)

  Process Data Report (Scenario)

  Machine Health

  Features

  Operation Monitoring

  Teleservice

- **smartApp optimization:**

  Process Data (Scenario)

  Operation KPIs (Split of Cycle Time, Handled Cargo per Hatch)

  Optimization KPIs (Crane Utilization, Gear Speed, Split of Cycle Times, Load Path, Outreaches, Luffing Path, Slewing Angle Path, Drive Configuration)
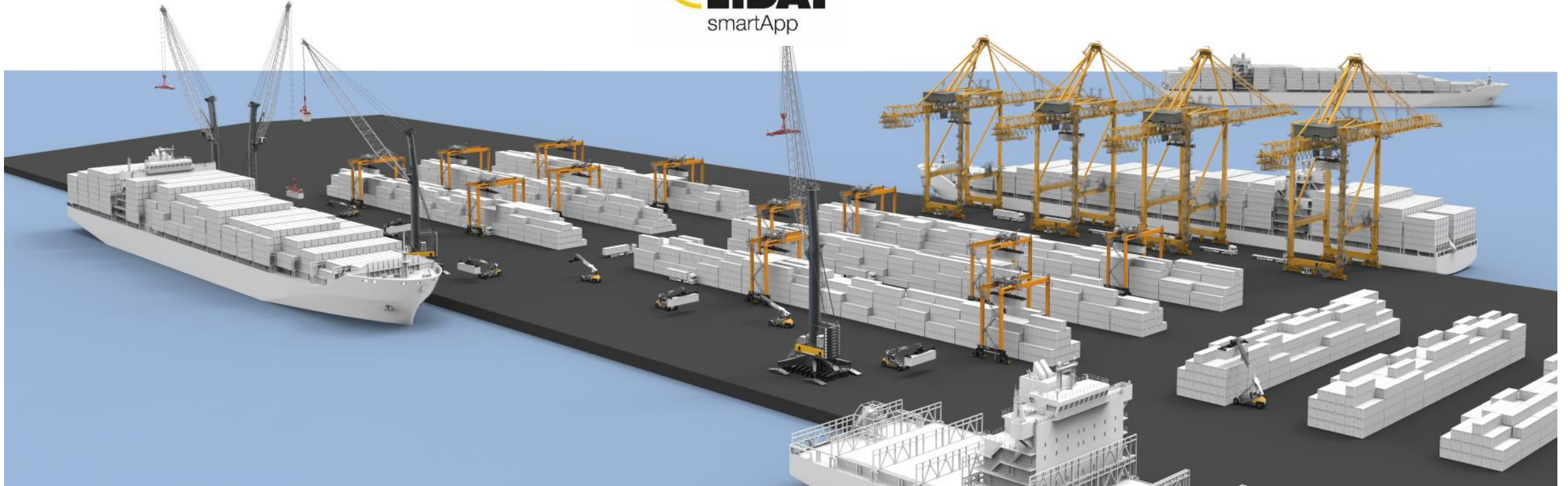
  Process Data Report (Scenario) Optimization (Split of Cycle Time, Handled Cargo per Hatch, Crane Utilization, Gear Speed, Load Path, Luffing Path, Slewing Angel Path, Drive Configuration, Outreaches, Turnover per Hatch)

  Features
  Load Recorder
  Postion optimization

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Features and benefits:

Status reports
- Customise your dashboard (KPIs)
- Monitor your cargo handling process in real time

Detailed view
- In depth analysis
- Detailed view of variables over time, dependencies and distribution
- Compare multiple cranes

System integration
- SmartApp calculates forecasts
- SmartApp proposes optimisation measures
- Results can be sent to the crane/driver for immediate action

Training & simulation
- Data can be used to create realistic training scenarios on a simulator
- Improve operating skills in a safe environment
- Simulator based training can be monitored

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LiDAT SmartApp & LiSIM – Job report
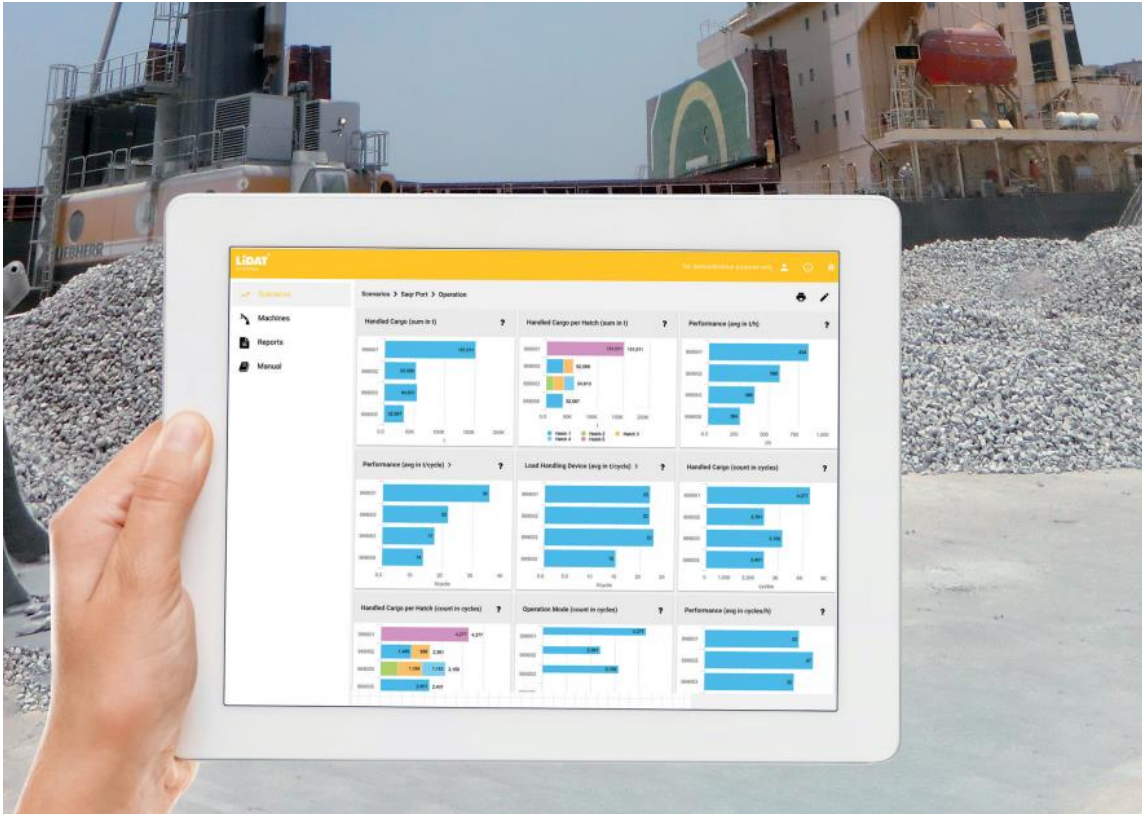

Saqr Port

Saqr Port is located at the northern tip of the United Arab Emirates, with access to the Arabian Gulf, and is the Middle East's major port for bulk cargoes, aggregates, pipes, cement, coal and other raw materials. Saqr Port is well-known for highly efficient material handling and premium infrastructure. The port's expertise has attracted additional business which has led to increased cargo volumes, over the past five years. Saqr Port handles several materials with densities up to 2 t/m³ and loads on average around 5 ships per day.

Liebherr units equipped with LiDAT SmartApp

- **3 x LHM 500**
- **3 x LHM 550**
- **2 x LHM 800**
- **1 x LiSIM Simulator with training software**

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LiDAT SmartApp & LiSIM – Job report

The task:

Due to the rapidly growing handling volume and a simultaneously growing crane fleet, the port was looking for an effective solution to increase the performance of the cranes and better manage the equipment fleet at the same time. The requirements were better planning of maintenance intervals, a good overview of the performance of individual crane operators and better positioning of the crane in relation to the ship and the hopper. The individual findings of the data analysis should also flow specifically into the individual training of the crane drivers. It was also important for Saqr port that everything is combined in one application and that it is easy and intuitive to use.

The solution:

LiDAT SmartApp & LiSIM

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LiDAT SmartApp & LiSIM – Job report

The results:
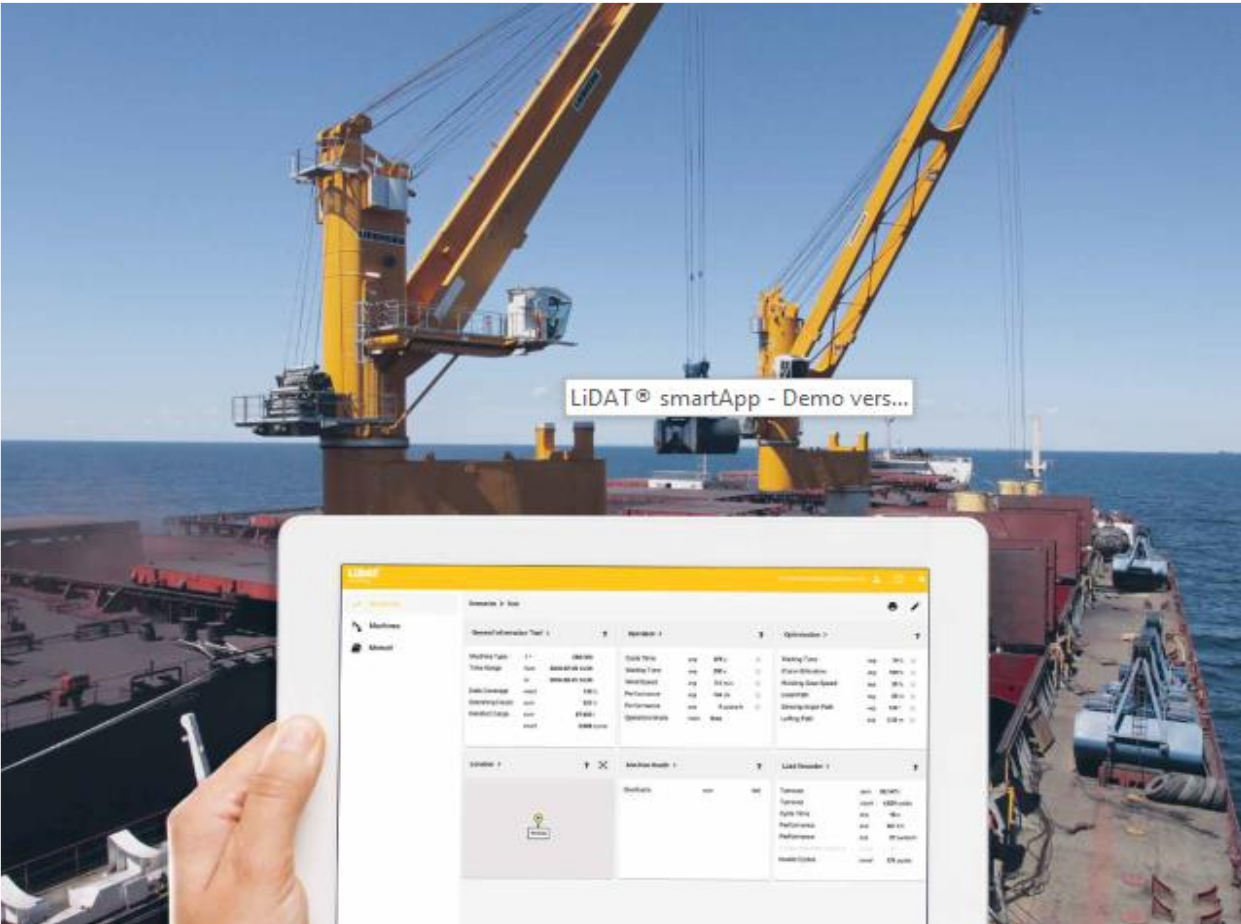
❖ **Overloads reduced to almost zero**

➜ **Longer lifetime & less wear and tear**

❖ **Increased throughput due to using Position Optimizer**

➜ **Increased efficiency**

❖ **Optimization of the process due to easy data analysis**

➜ **Higher turnover**

❖ **Improved crane drivers skills due to customized training measures**

➜ **Increased performance and safety level**

"What impressed us the most was how exactly the weak points of our crane drivers discovered by the smartApp can be transferred to the Liebherr simulator in order to eliminate them exactly.

Through this innovative webapp, its features and comprehensive dashboards (KPI's) Liebherr has generated a high added value for us."

Dr. Adrian Pearson
Operations Manager Saqr Port

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LiDAT® smartApp - Demo version

- Get your user account from:
  lwn-ts-itm@liebherr.com

- Login under:
  https://demo01-smartapp.liebherr.com/login

- Discover the possibilities

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Thank you for your kind interest