

HOW DO

Octopi pick locks, store tools, solve puzzles and open jars?

Each arm has **evolved** a semi-autonomous brain for swifter more informed decision-making.

Automation Retrofits

A set of adaptations that enable each crane in your yard to operate automatically and remotely.

Control. Evolved.



ADAPT AND THRIVE

Konecranes is the premier **port services** provider to brownfield terminal developments.

Our range of retrofit products will enable your fleet to adapt to a fast-changing environment.

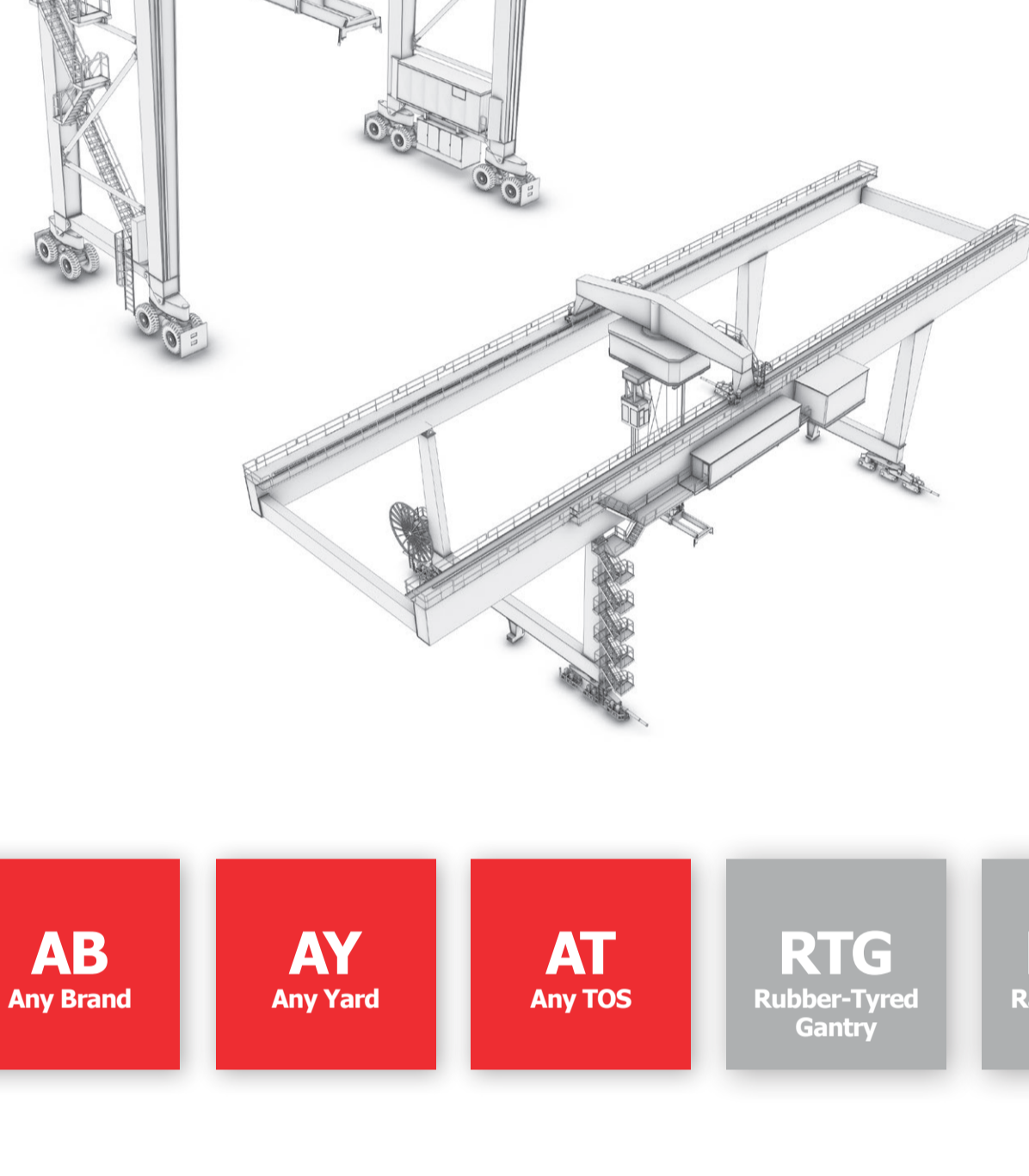
Welcome to your **evolution**. Small, incremental changes that enable existing fleets to continue to adapt and thrive.

AB
Any Brand

This technology can be applied to all Konecranes RTGs and RMGs, as well as other crane brands.

Remote Operation Retrofit

Dramatically increase productivity by decoupling the operator from the crane.



EQUIPMENT

This technology can be applied to all RTGs and RMGs including **other crane brands**.

Konecranes Auto-Steering, Stack Collision Prevention and Auto-TOS Reporting smart features are required per RTG.

AB
Any Brand

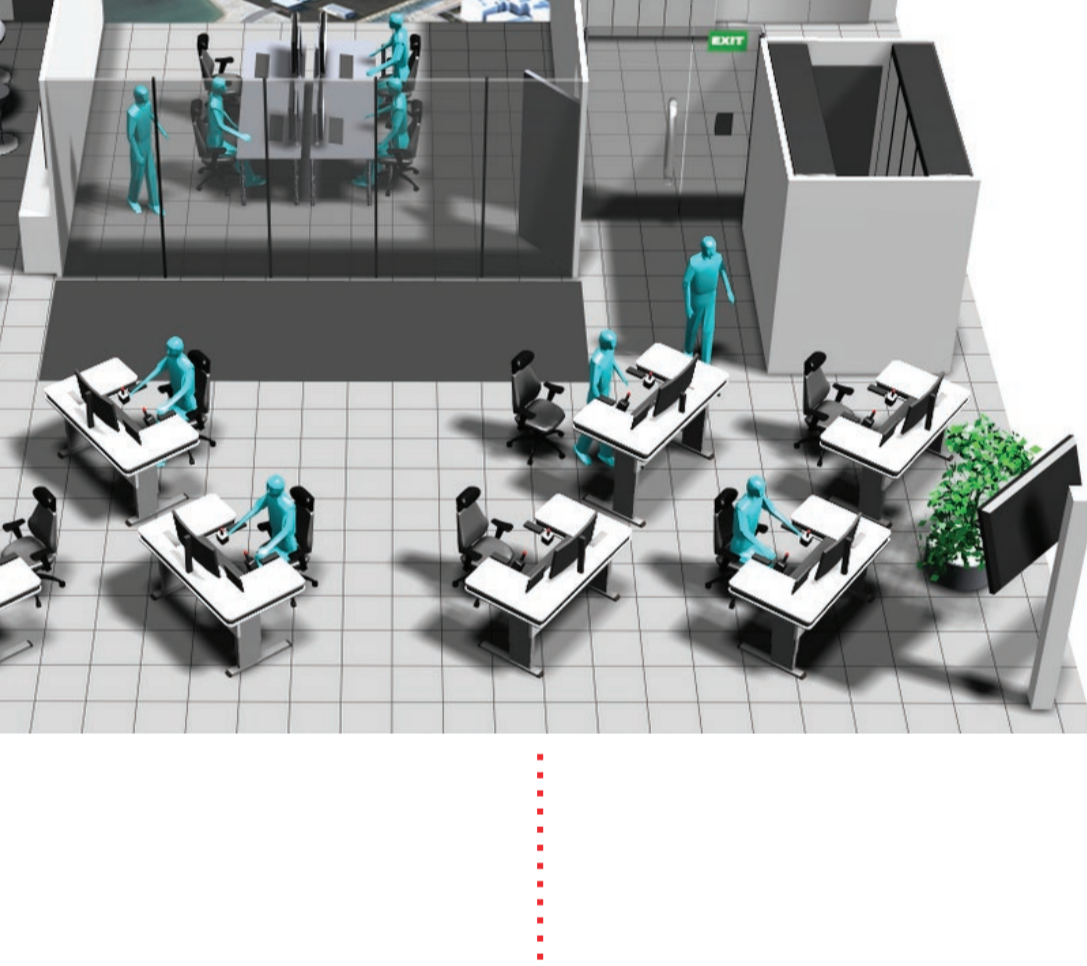
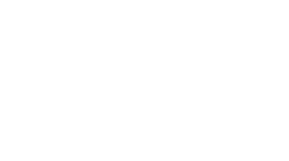
AY
Any Yard

AT
Any TOS

RTG
Rubber-Tyred Gantry

RMG
Rail-Mounted Gantry

Watch video at this link



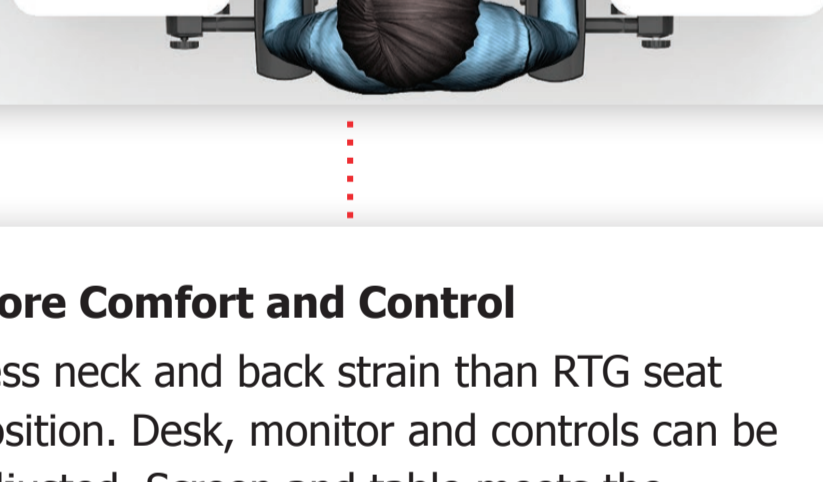
BENEFITS

- Operators work in an office-environment making job satisfaction, team communication and safe operations easier to achieve
- Each operating station can toggle between different cranes, enabling operators to work on different cranes per shift, meaning more **boxes per operator**
- Improved TOS reporting, and up-to-the-minute yard layout data.

THE KONECRANES REMOTE OPERATING STATION 2020

Tailored for Crane Operators

The ROS desk is equipped with controls that can be normally found in any crane cabin. The main components are the video display, joy sticks and the touch panel.



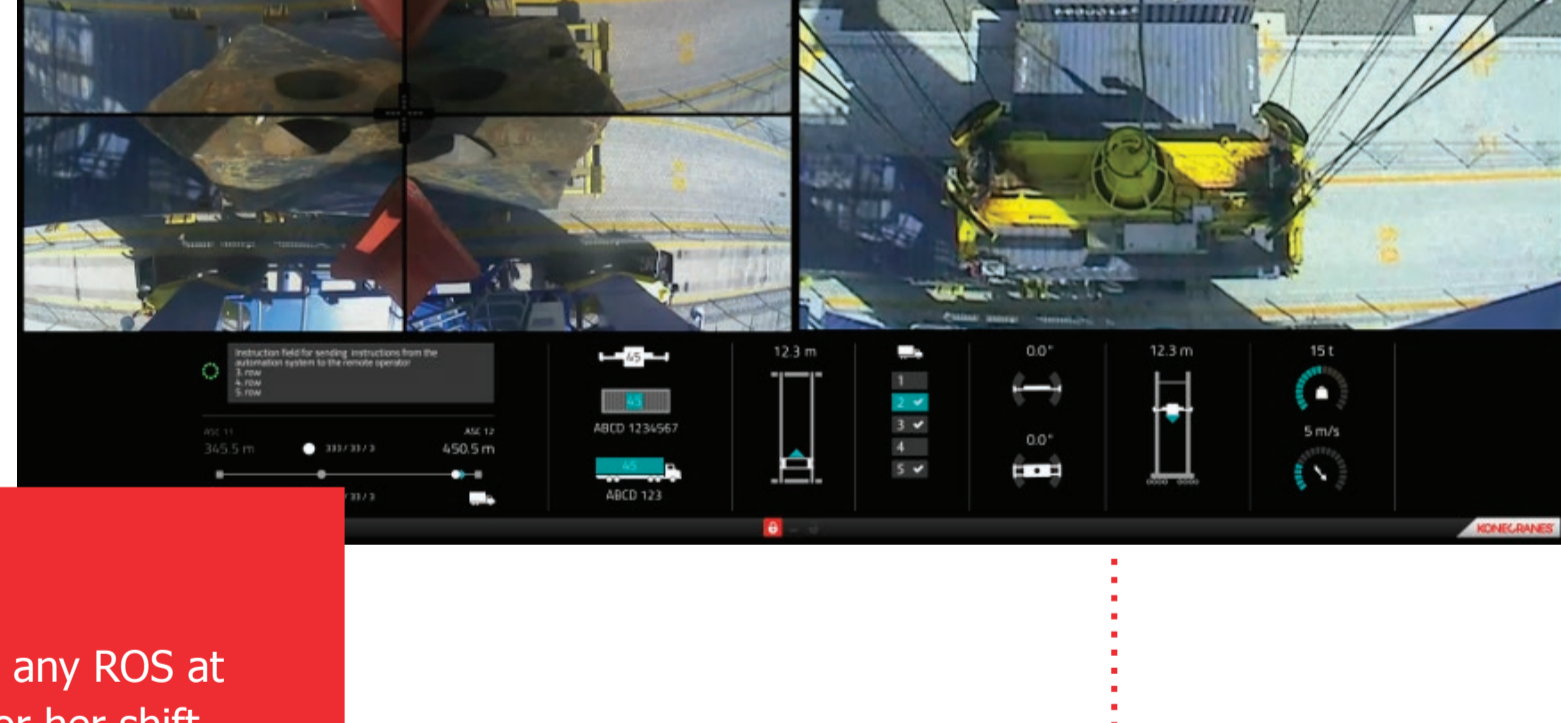
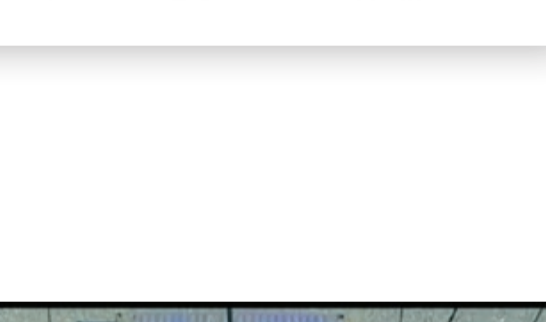
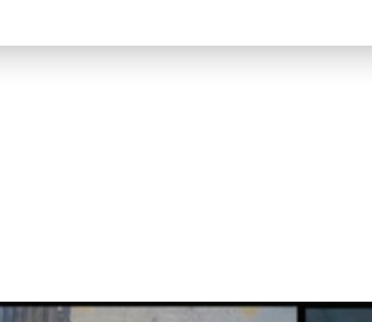
Easy to Learn and Use

Konecranes' easy-to-use, safety by design UI/UX makes it easy to learn, safe and rapid uptake in any language.



More Comfort and Control

Less neck and back strain than RTG seat position. Desk, monitor and controls can be adjusted. Screen and table meets the EN 894 ergonomics requirements for the design of displays and control actuators.



HOW IT WORKS

- An operator logs into any ROS at the beginning of his or her shift.
- Our software interfaces with any TOS and delivers personalized work orders directly to the crane operator's touch panel once they have logged in.
- 11 high-definition live-feeds per crane are fed to the ROS via 1Gb/s ethernet, fibre or wireless connection.
- The operator selects the work order from the panel and executes the job like in the normal manual crane.

WHAT YOU NEED TO KNOW

- An Ethernet connection with a standard 1 Gbit/s data transfer capacity between each crane and the customer's server room to ensure stable, high-res and real-time streams from the cameras. NOTE: Individual cranes do not consume that amount of data.
- The required connectivity between the crane and server room can be achieved by using fiber optics in the cable reel, Waveguide-based system on busbar or completely wireless.
- Ask for our white paper on our totally wireless solution – a robust solution with industrial grade reliability, and industry-leading stability and speed.
- Konecranes must provide appropriate facilities (including all utilities) for the remote operating centre.

SELECTED REFERENCES

Click on for the full case study.)



Contecar | Cartagena | 2019
 Bridging the OEM Divide

DPW | Yarimca | 2018
 DP World Upgrades of its Konecranes RTGs to Remote Operation.

Ports. Evolved. | KONECRANES



Konecranes is a world-leading group of Lifting Businesses™, serving a broad range of customers, including manufacturing and process industries, shipyards, ports and terminals. Konecranes provides productivity enhancing lifting solutions as well as services for lifting equipment of all makes. The Group has more than 16,000 employees at 600 locations in 50 countries. Konecranes shares are listed on the Nasdaq Helsinki (symbol: KCR).

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