

How has

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# The Sandhill Crane become the oldest bird species on earth?

They are engineered to endure. Over the last 10 million years only slight adaptations to their wingspan have been required to keep the species thriving.

**Endurance. Evolved.**

## Crane Modernizations

Similarly, the steel structures of most older cranes retain their integrity, and require mostly small adjustments in reach, location or machinery to increase the crane's longevity.

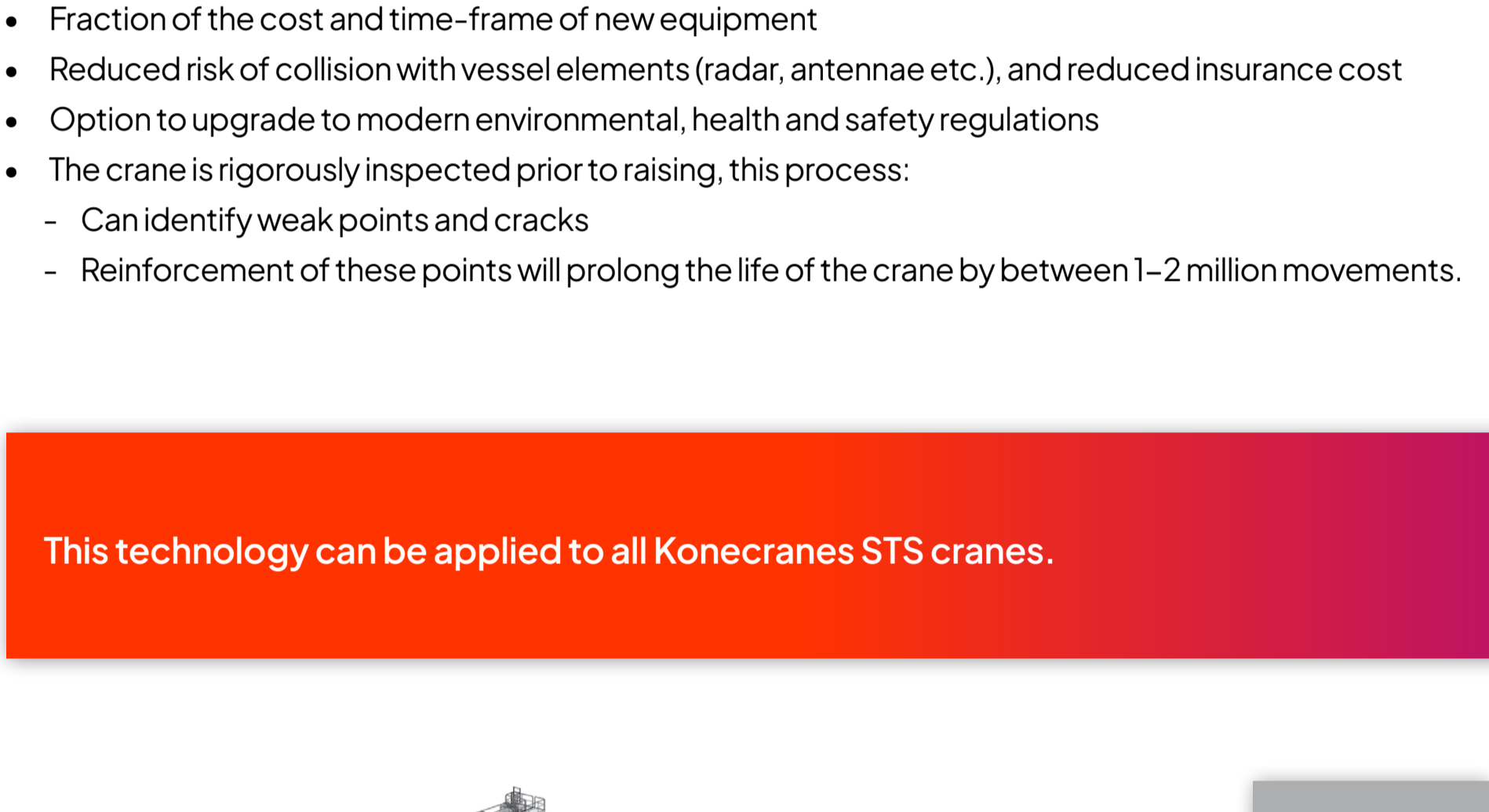


## Adapt and thrive

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.

## STS Raising

Fast and cost-effective way to accommodate bigger vessels and more customers.



## Benefits

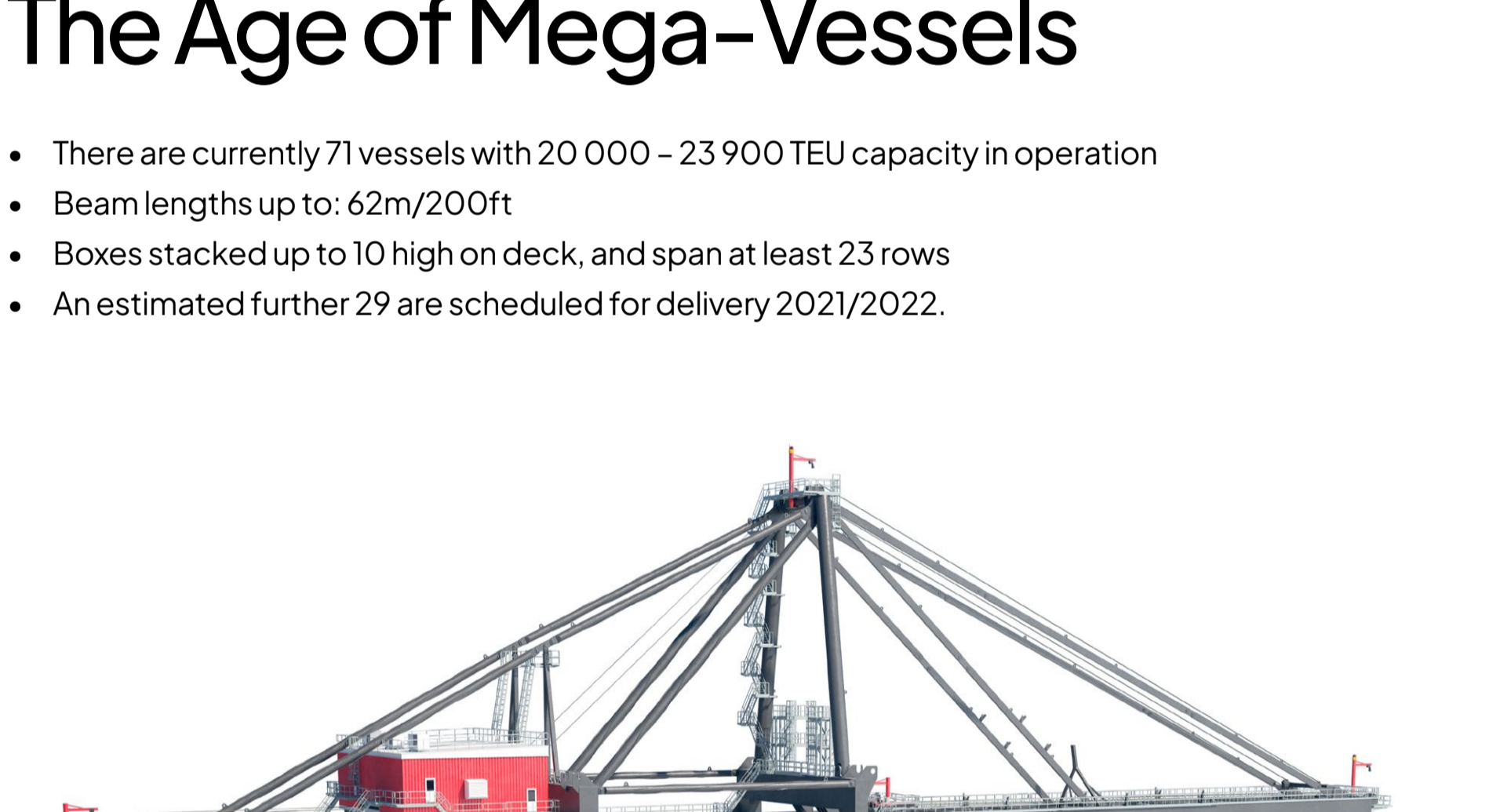
- Service larger vessels at reduced cost and environmental impact
- Fraction of the cost and time-frame of new equipment
- Reduced risk of collision with vessel elements (radar, antennae etc.), and reduced insurance cost
- Option to upgrade to modern environmental, health and safety regulations
- The crane is rigorously inspected prior to raising, this process:
  - Can identify weak points and cracks
  - Reinforcement of these points will prolong the life of the crane by between 1-2 million movements.

This technology can be applied to all Konecranes STS cranes.



**STS/GU**  
Ship-to-Shore  
Grab Unloader

[more info](#)



## The Age of Mega-Vessels

- There are currently 71 vessels with 20 000 - 23 900 TEU capacity in operation
- Beam lengths up to: 62m/200ft
- Boxes stacked up to 10 high on deck, and span at least 23 rows
- An estimated further 29 are scheduled for delivery 2021/2022.



## How it works

- The process begins with a rigorous crane inspection and feasibility study
- Konecranes conducts 3D modelling, simulations and stability calculations
- Using the Konecranes proprietary Lifting Towers concept
  - Reinforce the portal beam
  - Stabilize the rigidity of portal structure
  - Raise execution and supervision
  - Install the leg sections
  - Fasten new junction boxes and cabling
  - Install continuous PLC cable
  - Add new stairs and walkway including lights
  - Elevator modification.
- Test the hoisting lifting according to Konecranes crane instruction
- Commissioning and hand over of the crane.

## What you need to know

- **Included in Scope:**
    - Modelling, simulations and stability calculations
    - Reinforcement of the portal beam
    - Stabilization by maintaining the rigidity of portal structure
    - Extensive testing and commissioning protocols
  - **Not Directly Included in Scope:**
    - Moving of STS from quay to a site area and vice versa
    - HV cable disconnection and connection
    - Relocation/modification of spreader cable reel and/or gantry cable reel
    - New drum or modification
    - Hoisting service/emergency brakes modification
    - Change of hoisting ropes
  - **The crane will be out of operation for an average of 4-7 weeks**
  - **Optional Additions**
- This is an optimal time to perform additional crane optimizations:
- STS boom extension
  - Inspection of ropes, gearboxes, brakes, trolley improvements, pulleys, spreader cable reels, gantry and/or trolley wheels
  - STS Boom Collision Prevention
  - STS Gantry Collision Prevention
  - Snag load protection
  - Anti-sway system.



## Selected References



YEAR	CUSTOMER/LOCATION	QUANTITY
2017	FCT / St Petersburg	3

## Ports. Evolved.



Konecranes is a global leader in material handling solutions, serving a broad range of customers across multiple industries. We consistently set the industry benchmark, from everyday improvements to the breakthroughs at moments that matter most, because we know we can always find a safer, more productive and sustainable way. That's why, with around 16,600 professionals in over 50 countries, Konecranes is trusted every day to lift, handle and move what the world needs. In 2023, Group sales totalled EUR 4.0 billion. Konecranes shares are listed on Nasdaq Helsinki (symbol: KCR).

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