



Concept High-Productivity STS Cranes

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Ultra Large Container Vessels



CMA CGM Benjamin Franklin at Port of Long Beach



Recent Crane Systems

Conventional

Tandem main hoist lifts

Cranes on either side

Semi-automation with added shore hoist

Remote operations

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1958 - The First STS Crane (OK, not so “Recent”)

1958 Matson

Paceco

Outreach 23.8 m

Gage 10.4 m

Lift height 15.5 m

Rated load 24 t

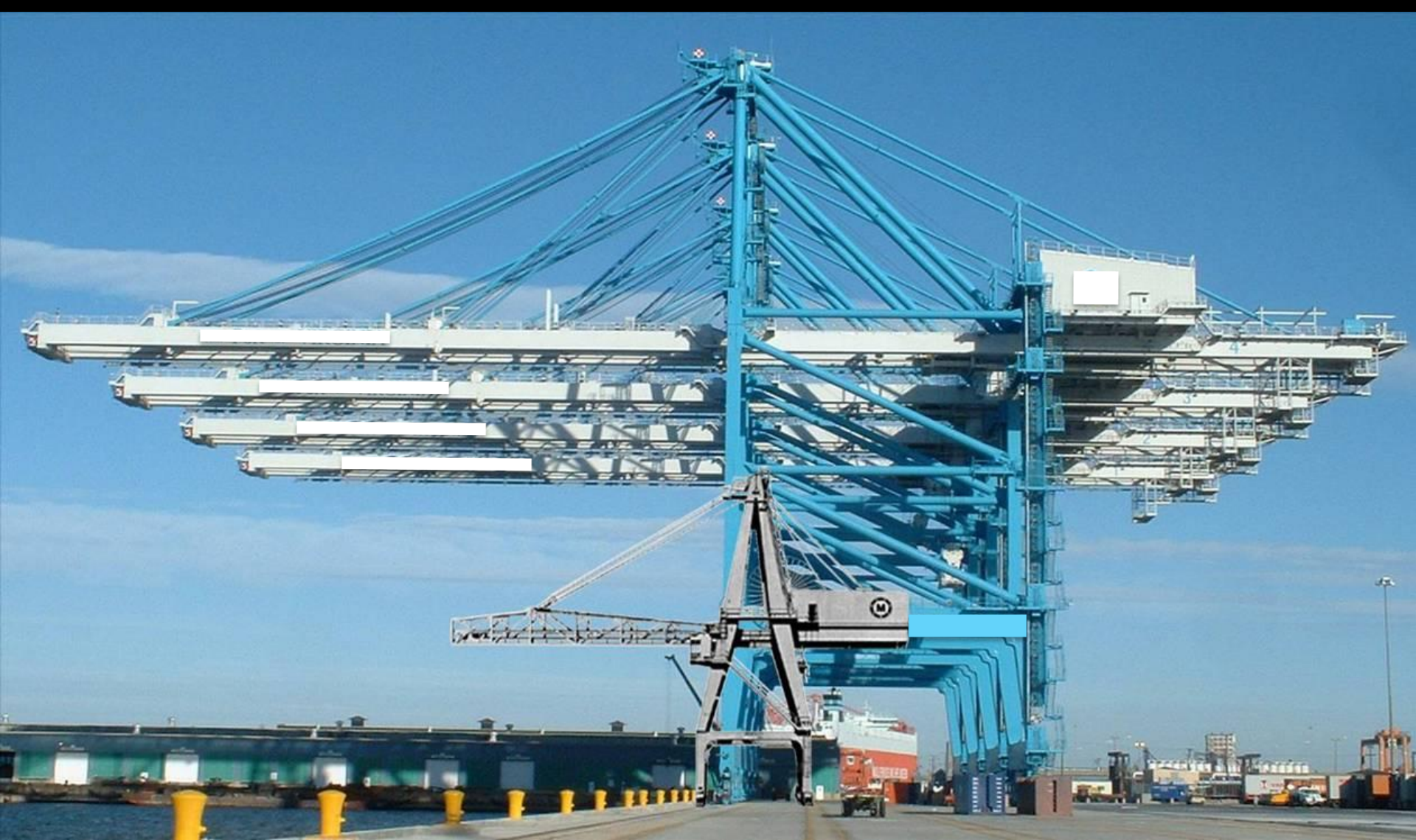
24 foot box

12 to 15 lifts an hour



Conventional STS Crane





Cranes on Either Side

“Ship in a Slip” – Ceres Amsterdam



Tandem Hoist

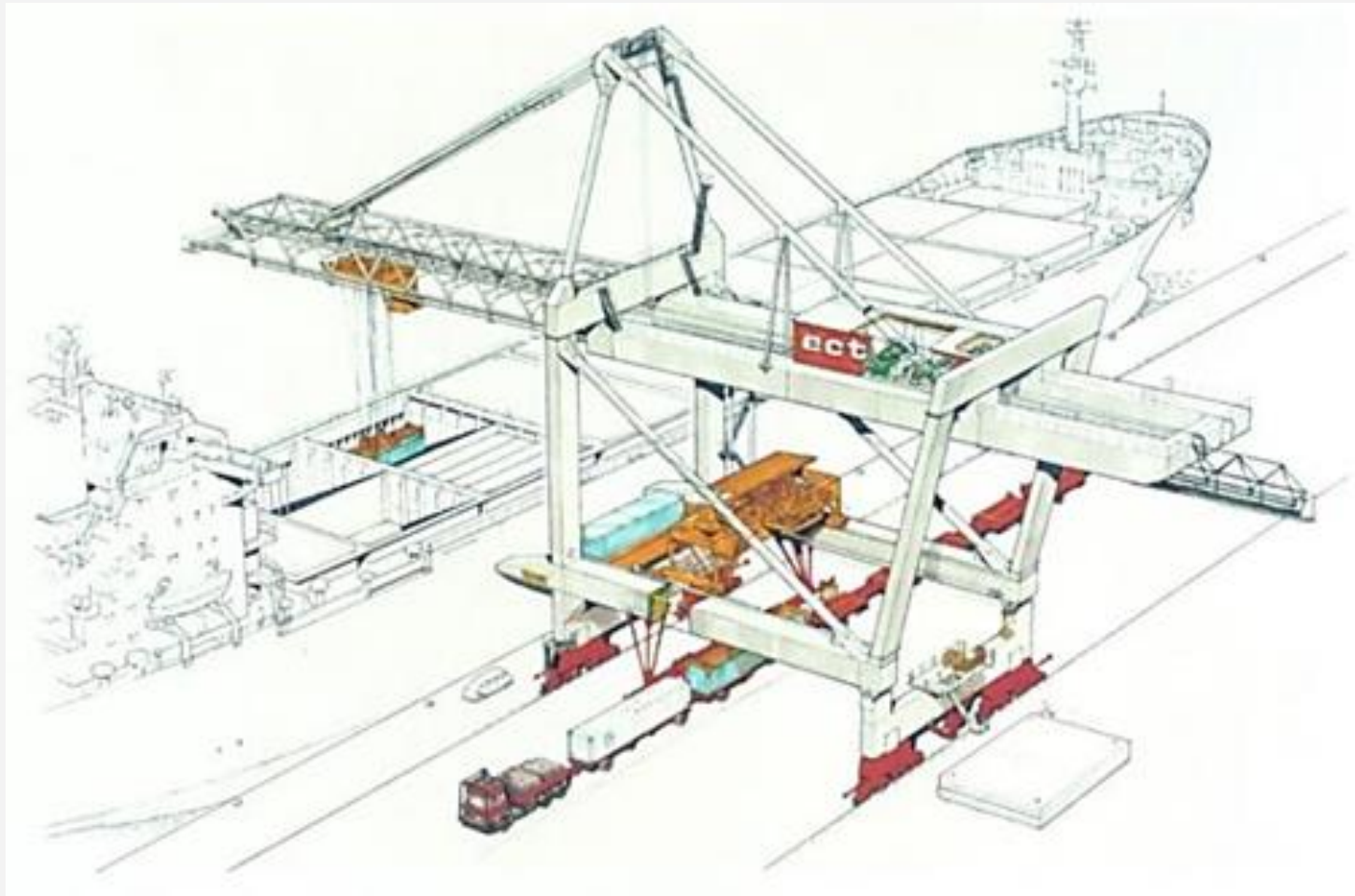


Dual Hoist – Triple Spreader

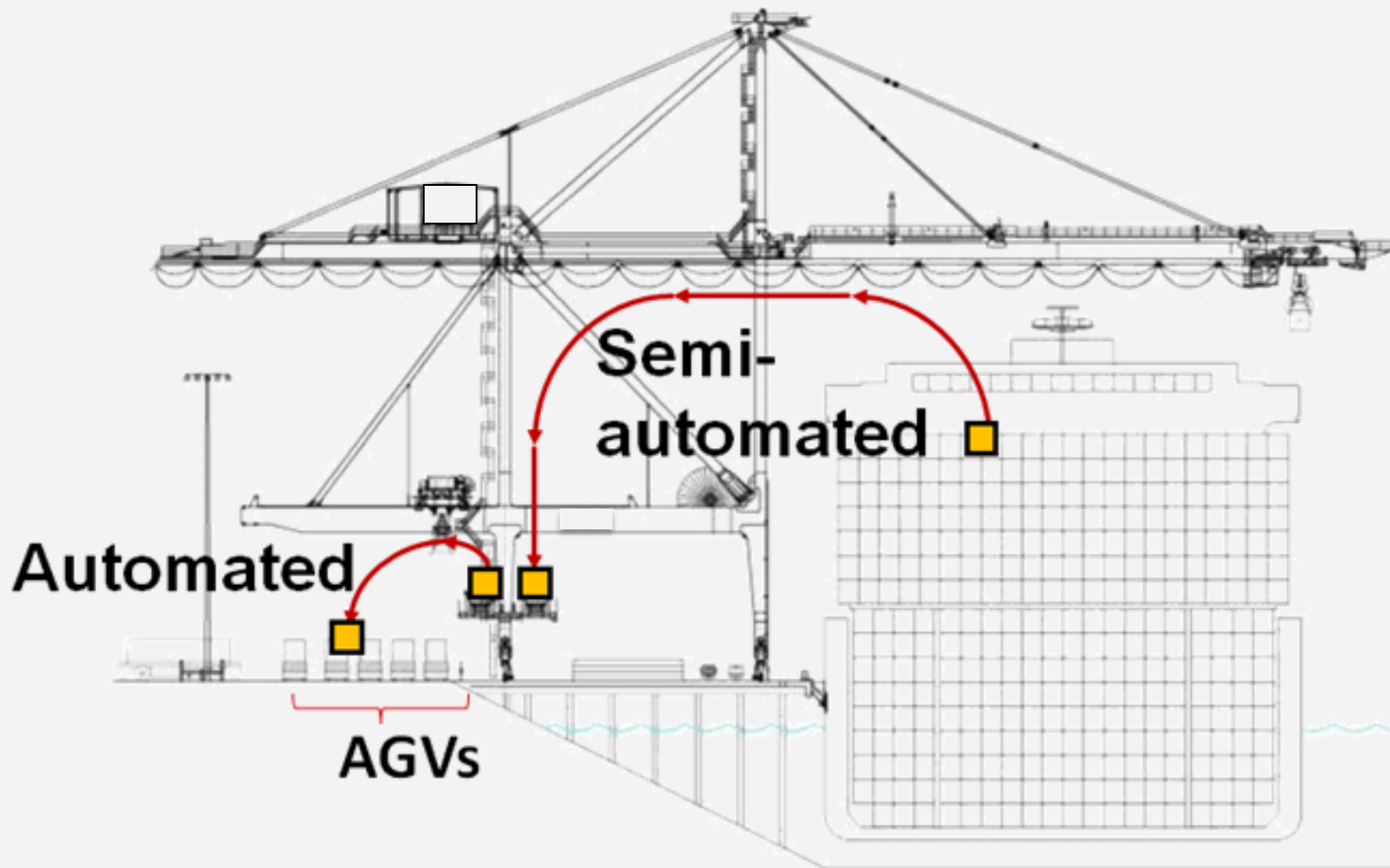


ECT Dual Hoist by Nelcon

(1970s)



Automated Dual Trolley



Remote Operations





Future Crane Systems

Floaterm

Liftech Supercrane

Paceco Supertainer

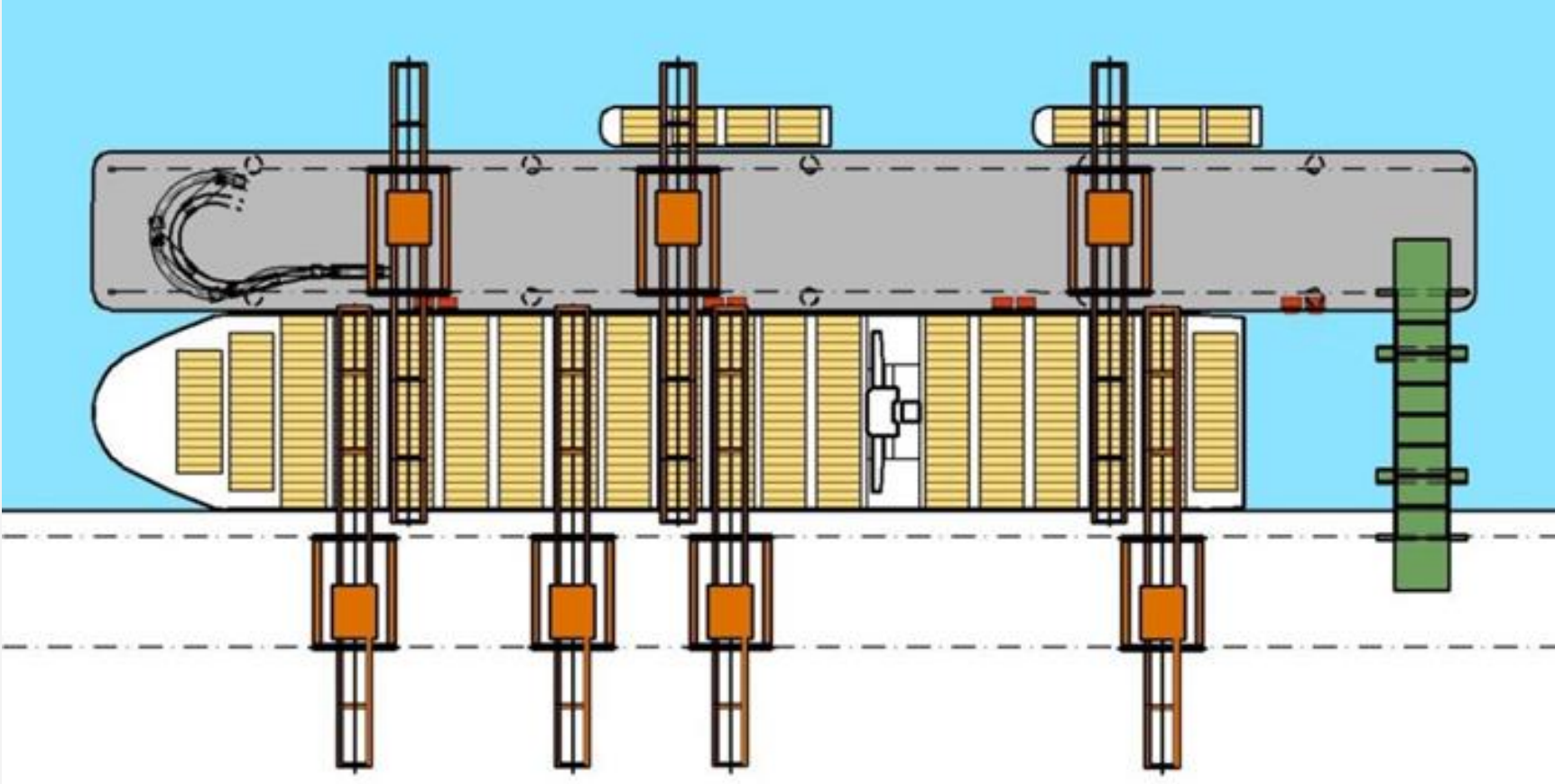
Delft University Carrier Crane

APMT FastNet

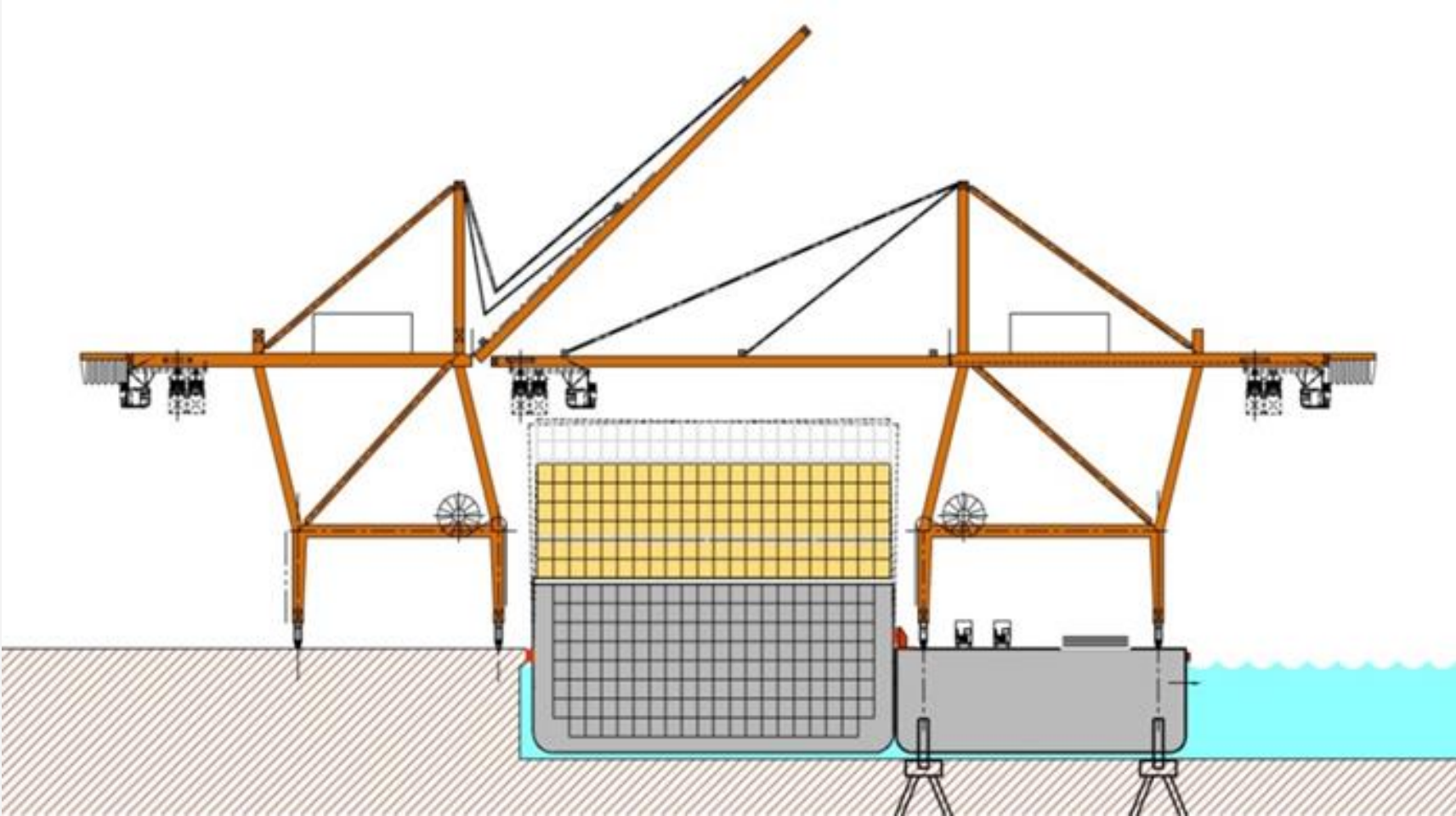
NGICT Crane System

Liftech

Floaterm – Plan View



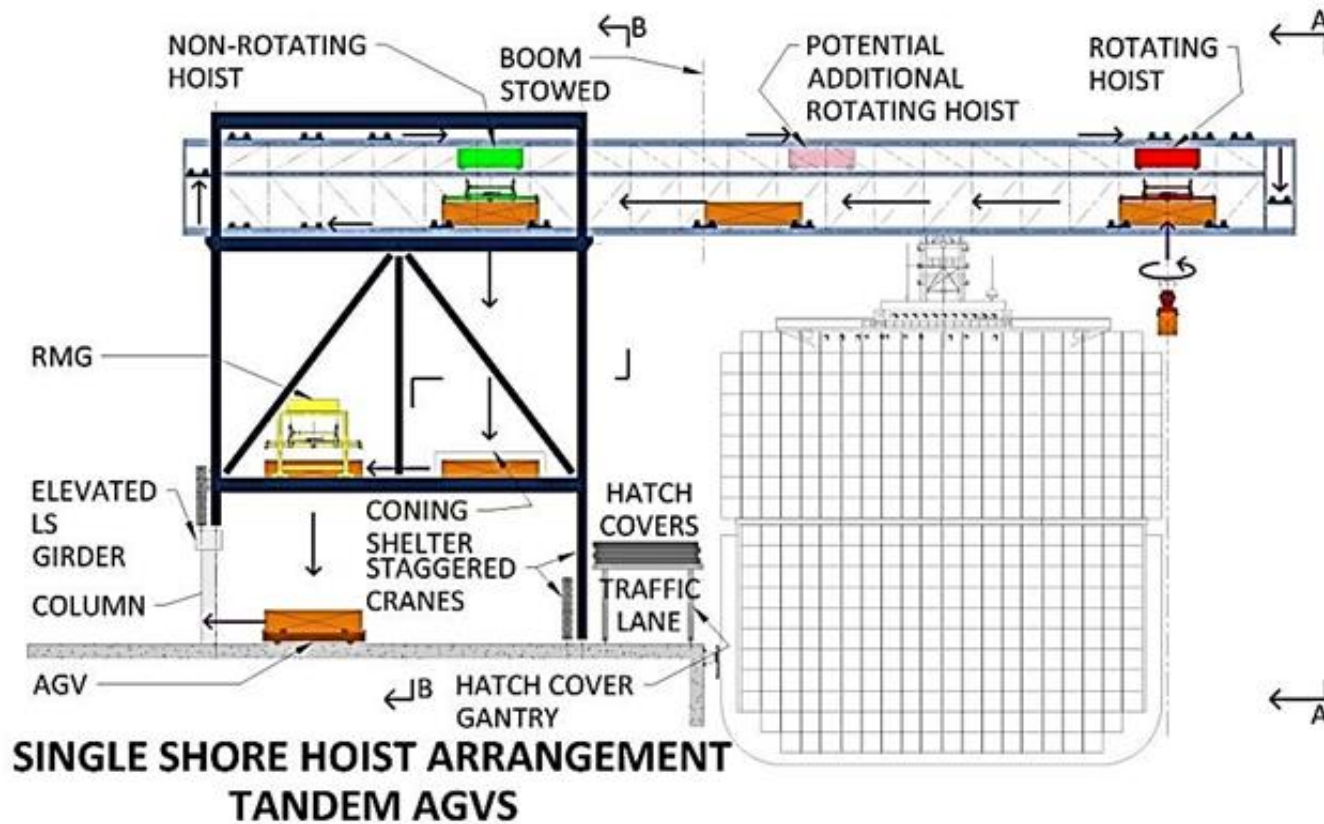
Floaterm – Elevation View



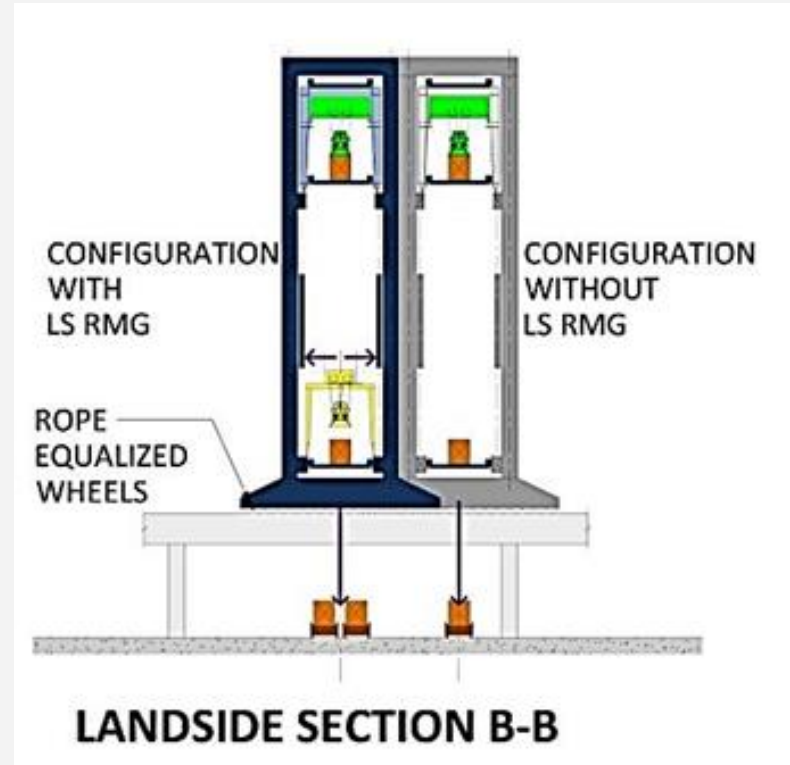
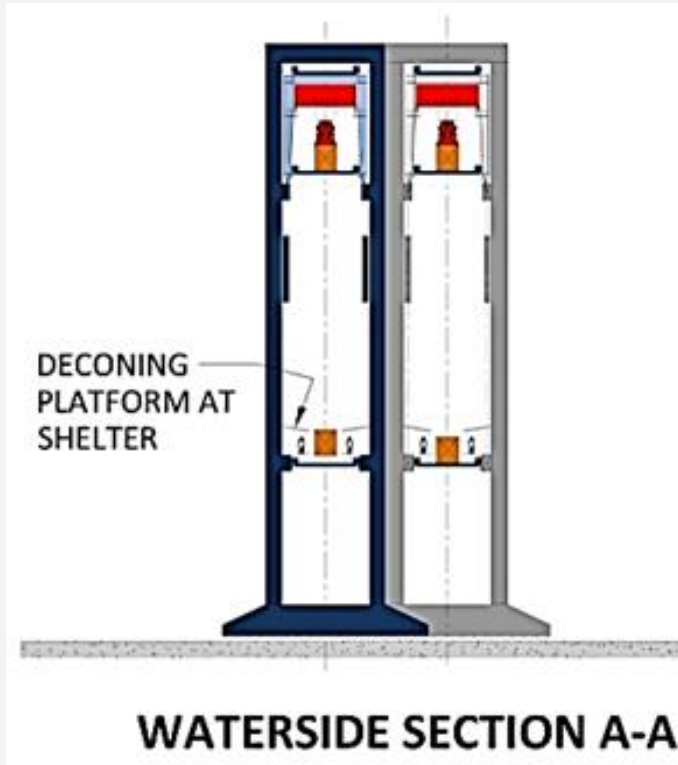
Paceco Supertainer



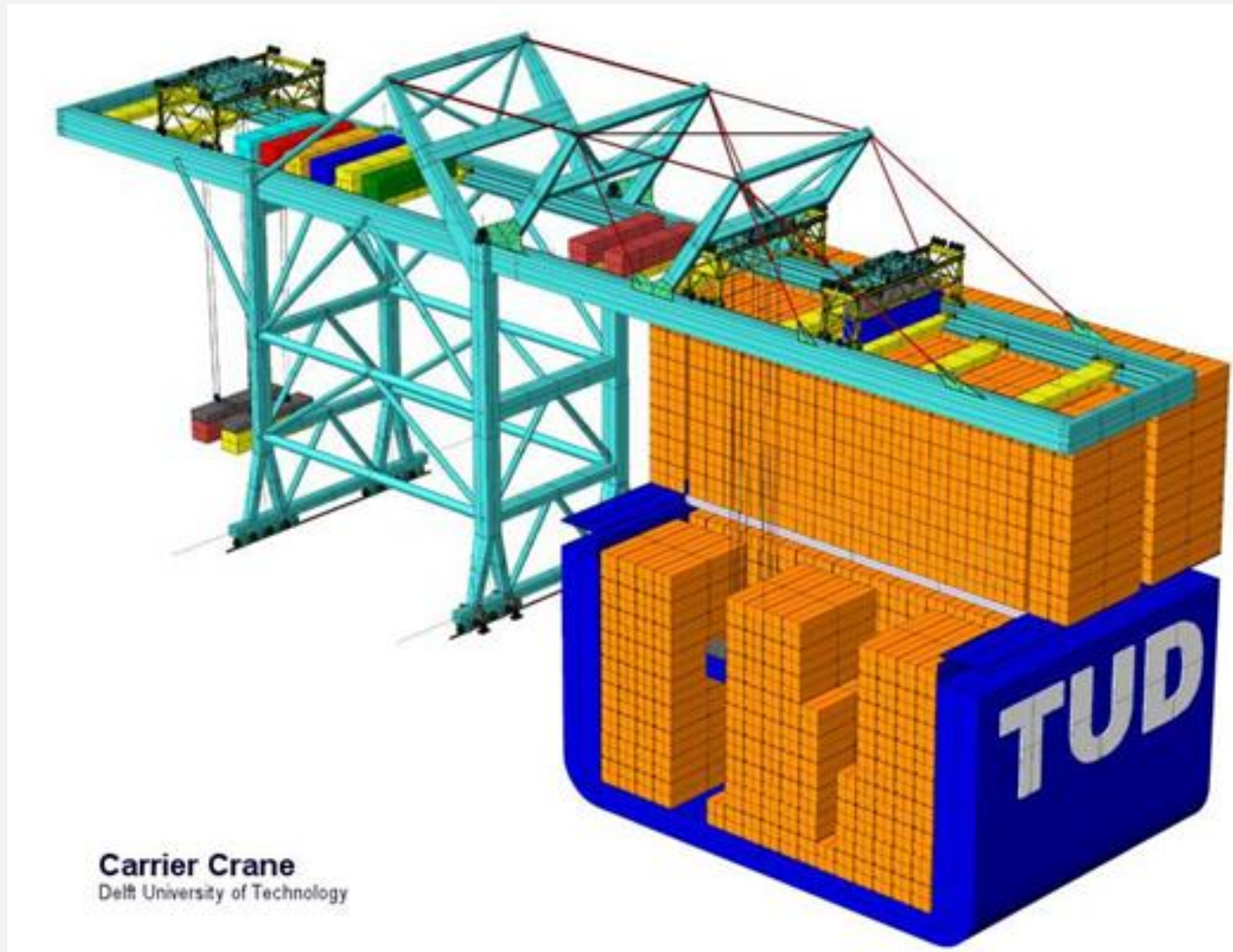
Liftech Supercrane



Liftech Supercrane – End View



Carrier Crane – Delft University

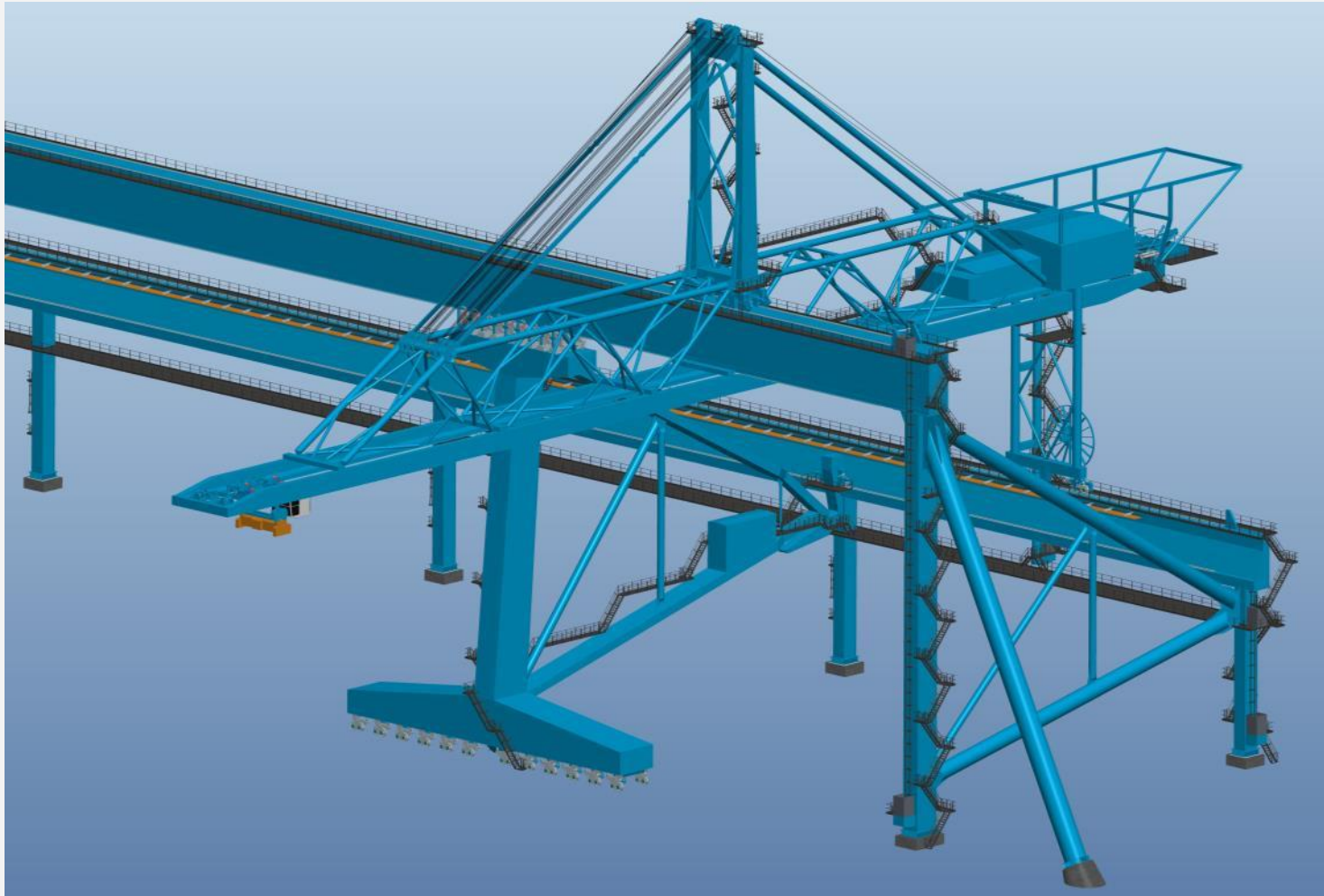


Carrier Crane
Delft University of Technology

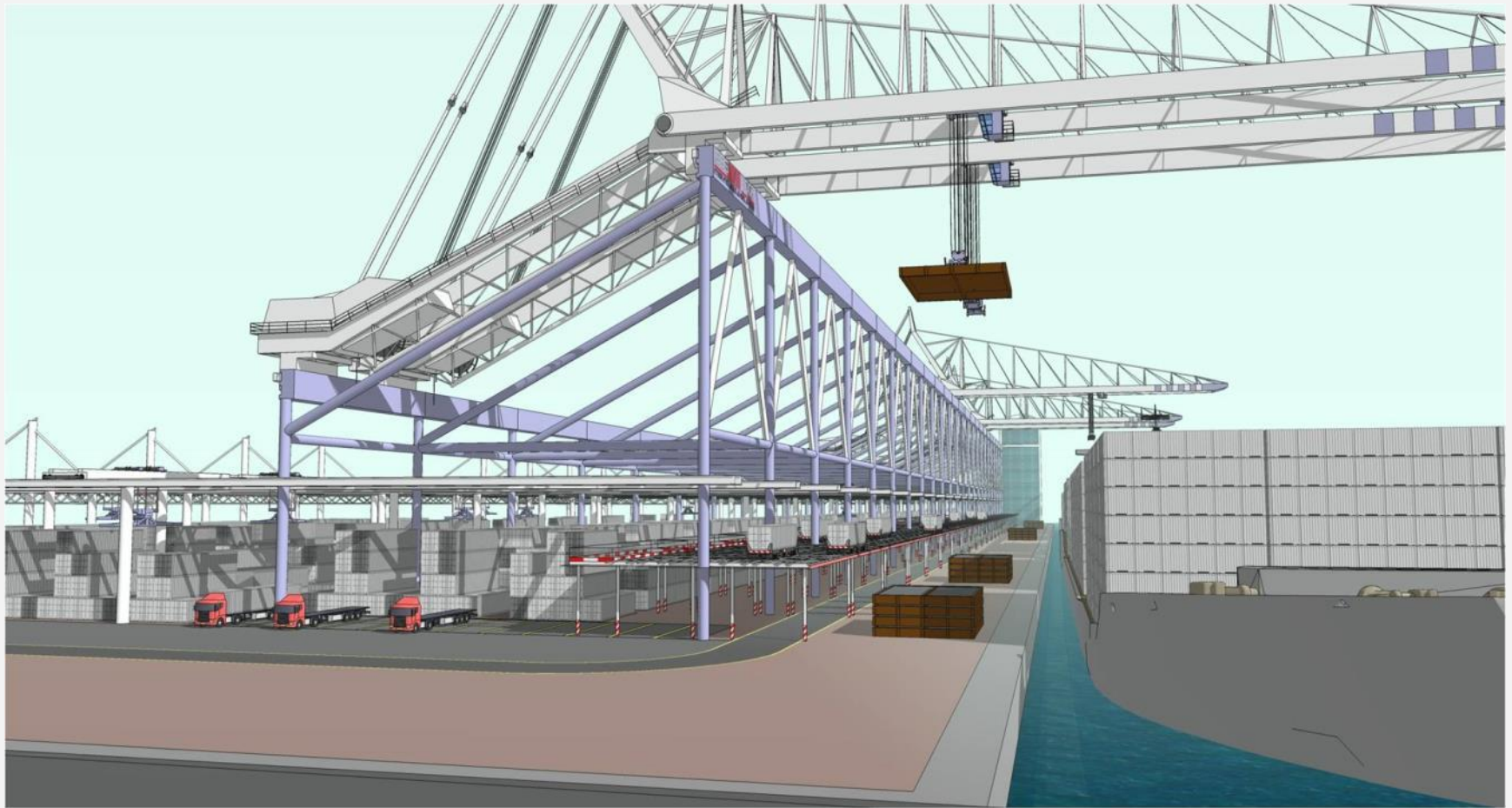
APMT FastNet System



APMT FastNet System



NGICT Crane System



Conclusion

Ultra large container ships need increased STS crane productivity.

A variety of recent design changes have occurred including lifting multiple 20 ft (or 40 ft) containers, increased automation, remote operation, and increased use of shore hoist systems.

Concepts have been developed for potential future systems.

Some design issues have been resolved while others remain.

As demand increases, so does the probability of an unconventional system being built that dramatically improves productivity.

Thank You

AAPA Oakland 2018

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