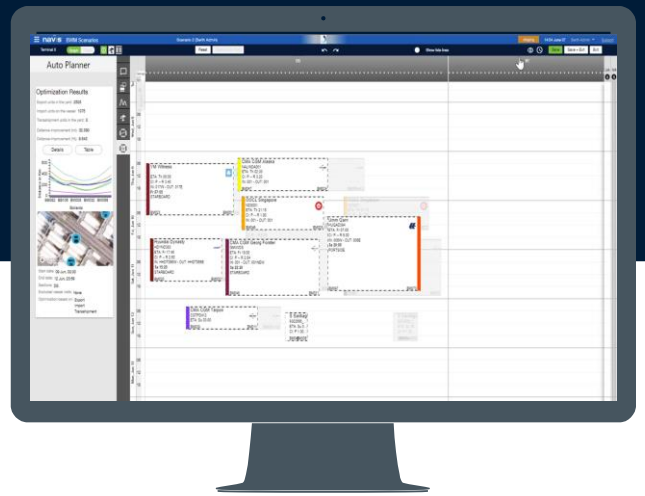
navis®

Driving Sustainable Operations Through RTG Optimization

TOC AMERICAS

navis® Dedication to TOS Innovation

Continuous technology modernization for secure, reliable, scalable, and user-friendly applications so that our customers can continue to move cargo safely and efficiently.



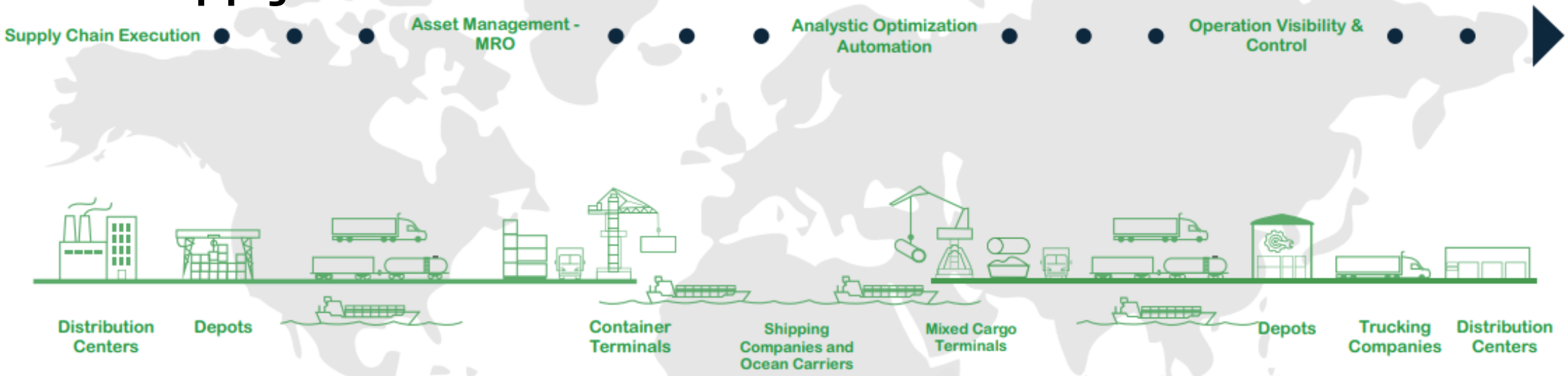
Alerts to promote proactiveness instead of reactiveness

Tools to optimize operations strategy to maximize the use of assets and space

Tools to provide connectivity and minimize unproductive move via collaboration

Over 30 years of continued innovation and expertise in terminal operations

Kaleris Supply Chain Solutions



TMS

Rail Visibility

Rail YMS & Transload

Truck TMS for Shippers

Financials

YMS

YMS

RT & Intrayard Location

Enterprise Yard Visibility

TOS

Maritime TOS

Mixed-Cargo TOS

Cloud-Based TOS

Inland Depot TOS

CVS

Carrier & Vessel

Freight Planning

MRO

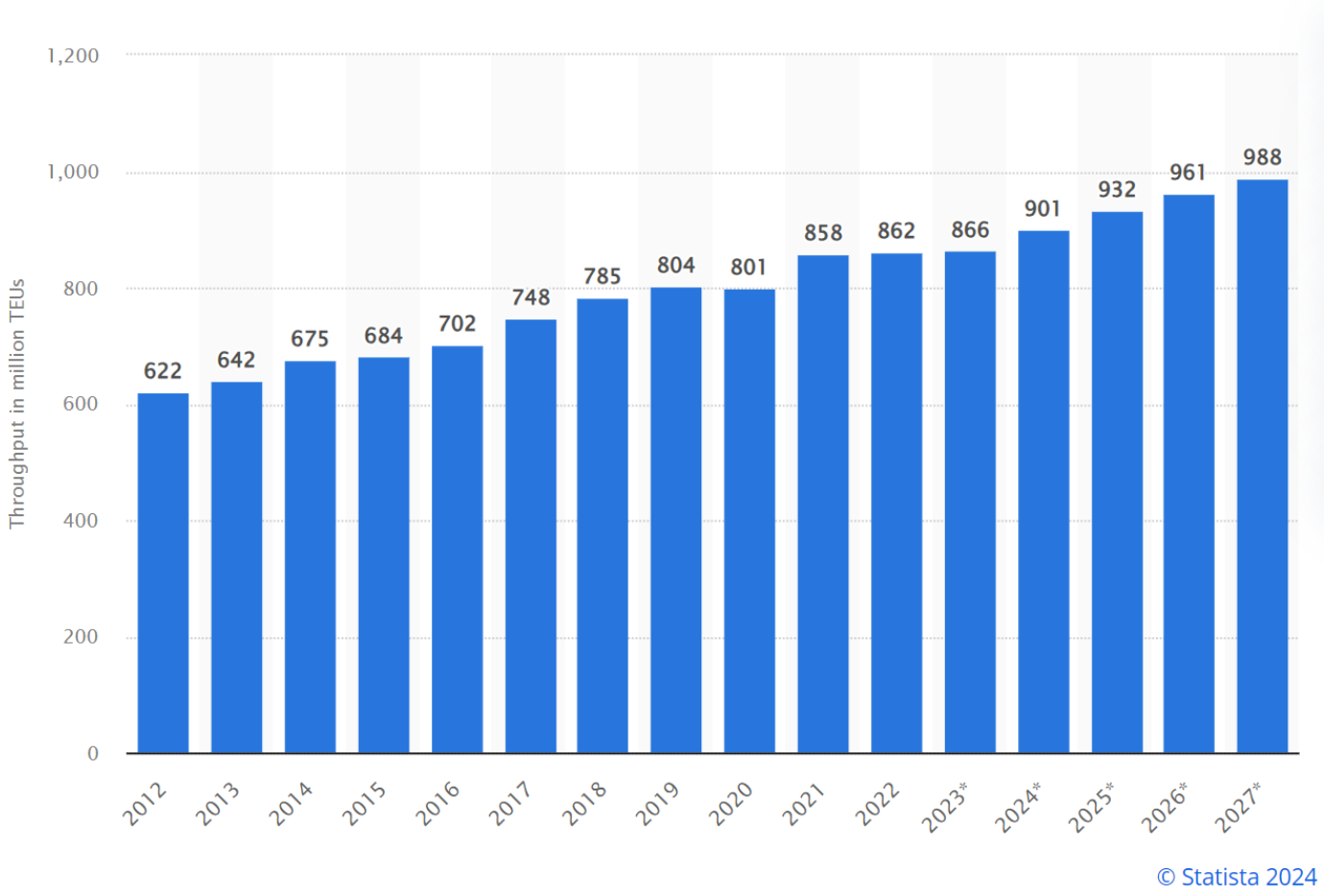
Intermodal & Railcar

Asset Management

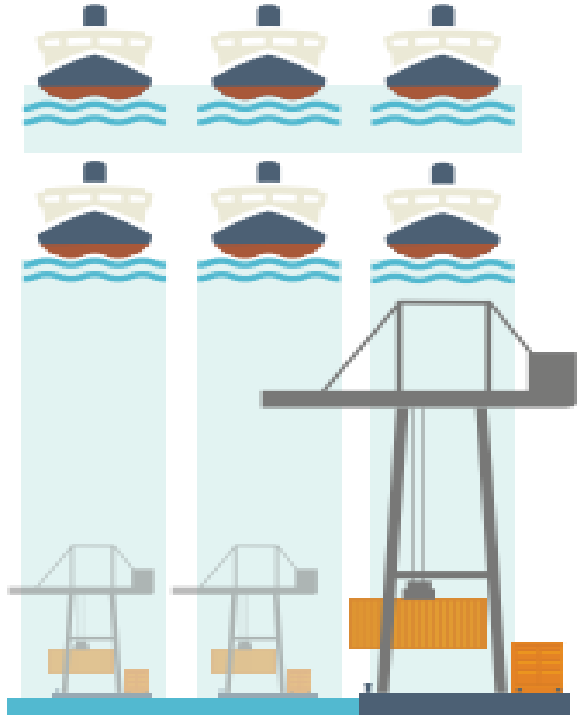
Repair Management

Billing & Invoicing

Container Throughput at Ports Worldwide Forecast (in million TEUs)



More volume, more ships



Doing more with less staff

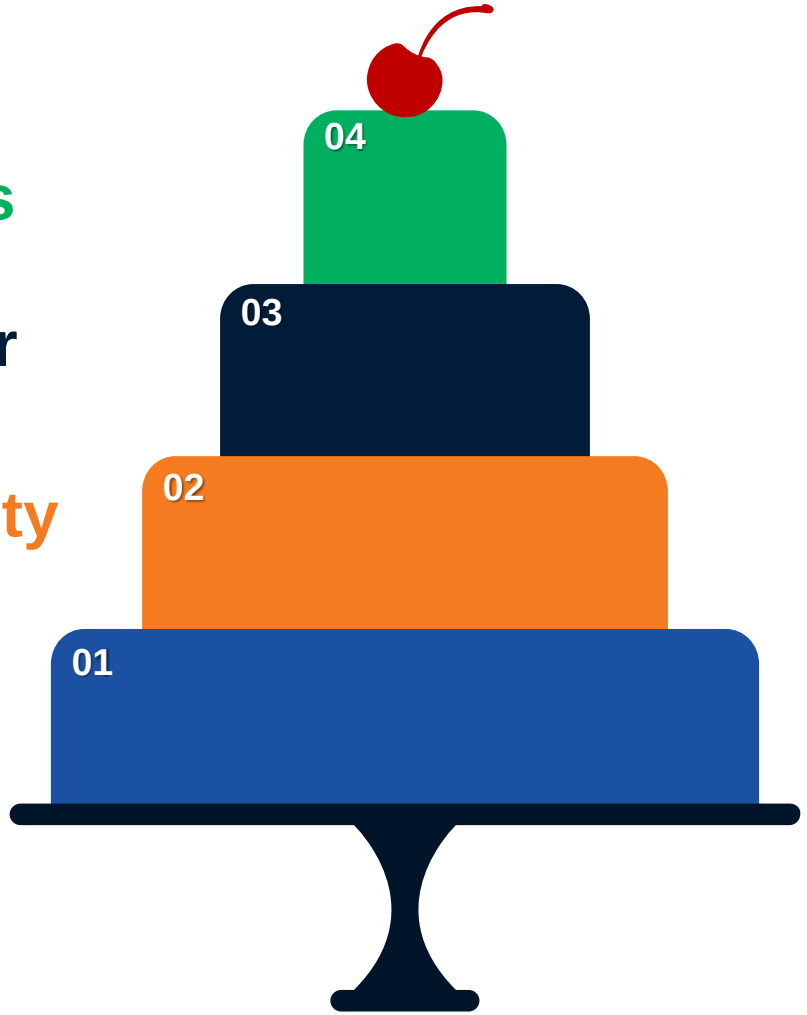
Terminal Optimization

Optimize Yard Cranes

Optimize Prime Mover

Optimize Yard Capacity

Digitized System of Record & Workflows



RTG Optimization

PrimeRoute

Expert Decking

N4 TOS

PTP's Scale and Growth

Port of Tanjung Pelepas

Located in Malaysia & equipped with state of the art facilities, equipment, and information technology systems integrating all port users.

The port delivers reliable, efficient and advanced services to major shipping lines and box operators, providing shippers in Malaysia and abroad extensive connectivity to the global market.

12.5 Million TEUs Capacity

14
Berths

562+
Prime Movers

Over 5 KM
Linear Quay

66 Super-Post Panamax Cranes (24 ULCV Cranes)

172
Electric Rubber Tyred Gantry Cranes

15
World Rankings

…One of the busiest container terminals in the world

RTG-O : Operational Gains

Increase **RTG productivity** leveraging TOS data

Promote a shift from reactive to **proactive**

Increase **visibility and control** to adapt to changing conditions

RTG Optimization

Leveraging Holistic TOS Data

Automate decision making on RTG job, block and lane assignment

Improve **usability** for flexibility.
Step-wise deployment of technology

Automating CHE ranges maintenance, **no more micromanaging** the CHE zones

* RMG, CRMG, CARMG

PTP - Early Adopter of RTG Optimization

PTP's Success with Navis RTG-Optimization

Implemented in 2022, Port of Tanjung Pelepas uses Navis N4 optimization module, RTG-Optimization, for automated dispatching, solution providing lane, and block change recommendation.

DAILY EXPRESS: THURSDAY, 8 SEPTEMBER 2022

Port of Tanjung Pelepas collaborates with Navis on technology innovation to optimise operations and enhance visibility across all RTGs in its yard and upcoming jobs at its terminal, reducing TEU handling costs.

PTP implements Navis RTG Optimisation

KUALA LUMPUR: Navis, a leading global provider of port and terminal operating systems and carrier and vessel technology solutions, announced that the Port of Tan-

Meanwhile, PTP CEO Marco Neelsen said the transition of digitalisation and automation is speeding up in the entire maritime industry.

THE BORNEO POST: THURSDAY, 8 SEPTEMBER 2022

Port of Tanjung Pelepas implements Navis RTG optimisation

KUALA LUMPUR: Navis, a leading global provider of port and terminal operating systems and carrier and vessel technology solutions, announced that the Port of Tanjung Pelepas (PTP) in Johor has implemented the Navis RTG Optimisation.

This is to improve the utilisation of PTP's rubber tire gantry crane fleet and reduce handling costs per twenty-foot equivalent unit (TEU).

RTG Optimisation processes multiple dynamic business rules and complex operating constraints to automate execution decisions, increase crane productivity and improve operating efficiency.

PTP is a joint venture between MMC Corporation and APM Terminals (APMT), a leading global ports group.

It is one of the first APMT terminals to implement Navis RTG Optimisation.

"We are excited to partner with PTP and APMT to support their business goals. RTG Optimisation is an example of the innovation we are driving in our execution platform to unlock new value for our customers," said Navis chief executive officer (CEO) Kirk Knauff in a statement.

Meanwhile, PTP CEO Marco Neelsen said the transition of digitalisation and automation is speeding up in the entire maritime industry.

"To secure efficient, sustainable operations and business competitiveness, PTP has proactively invested in its assets and infrastructure aligned with the PTP environmental, social, and governance agenda and digital strategy roadmap.

"PTP is committed to continuing with the journey and further creating sustainable value for our customers, shareholders and other stakeholders," he said.

As one of the world's busiest container ports and Malaysia's largest container terminal with an annual capacity of 12.5 million TEUs, PTP operates state-of-the-art facilities that include 172 rubber tire gantry cranes to manage container stacking on-site.

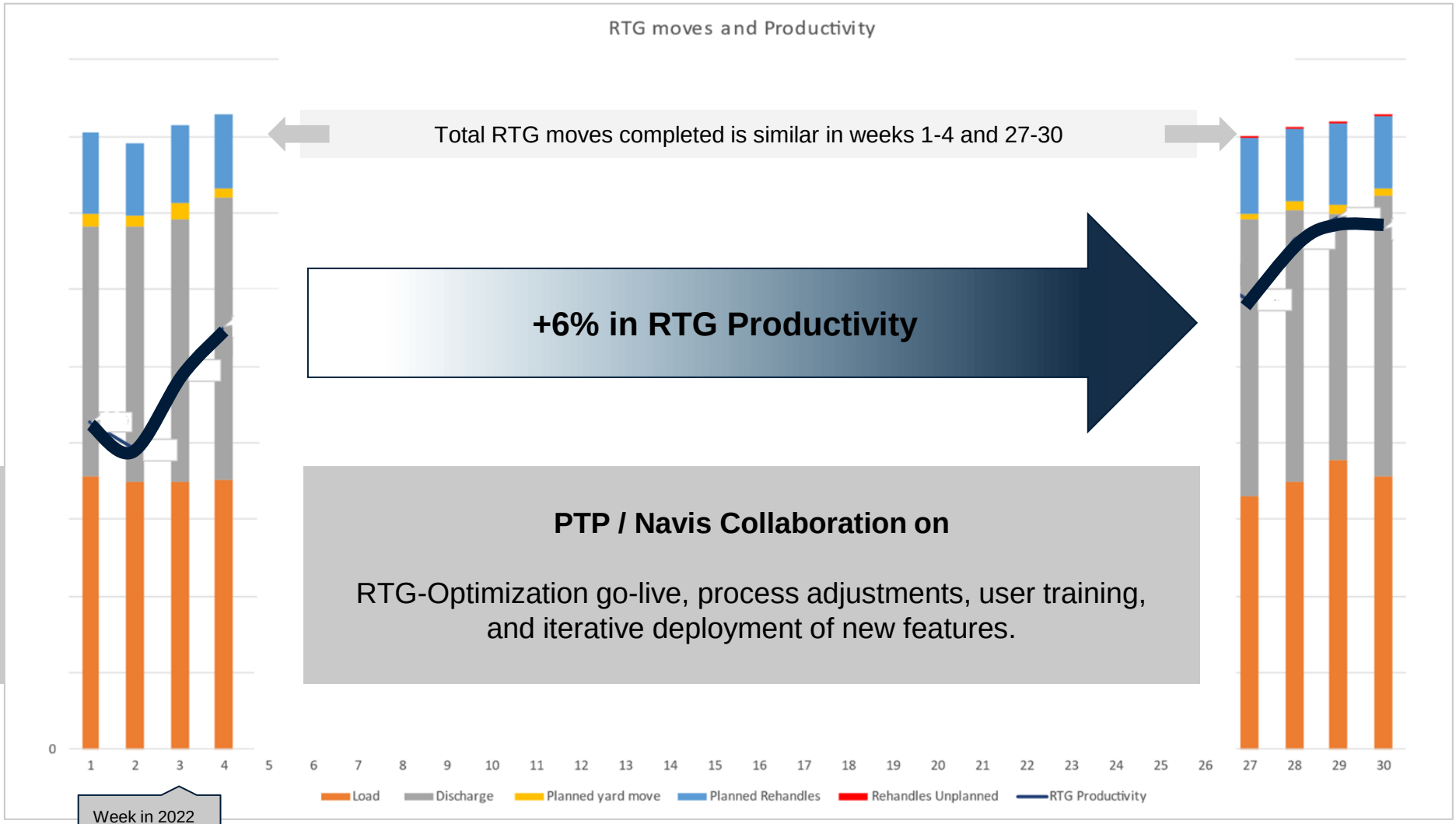
As the premier global provider of terminal operating systems, Navis's deep domain knowledge, implementation agility and ease of partnership enabled the successful implementation and delivery of RTG Optimisation at PTP. — Bernama

PTP is a joint venture between MMC Corporation and APM Terminals a leading global ports group.

"Digitalization is the way of the future, and our goal is to use technology to create a safer work environment for our workforce while simultaneously improving our efficiency, productivity, and customer experience. [...]"

- Joe Schofield, Chief Operating Officer, Port of Tanjung Pelepas

PTP - RTG Productivity Improvement with RTG Optimization



Preparation work to make RTG-O ready for a mega terminal.

PTP / Navis Collaboration on

RTG-Optimization go-live, process adjustments, user training, and iterative deployment of new features.

Ongoing deployment of new product features to further drive performance

RTG Productivity: the total number of RTG moves / hours between log-on/log-off events of all involved RTGs

Ports and Terminals | Container Handling | Port Development

Port of Tanjung Pelepas sets new TEU record

August 6, 2024

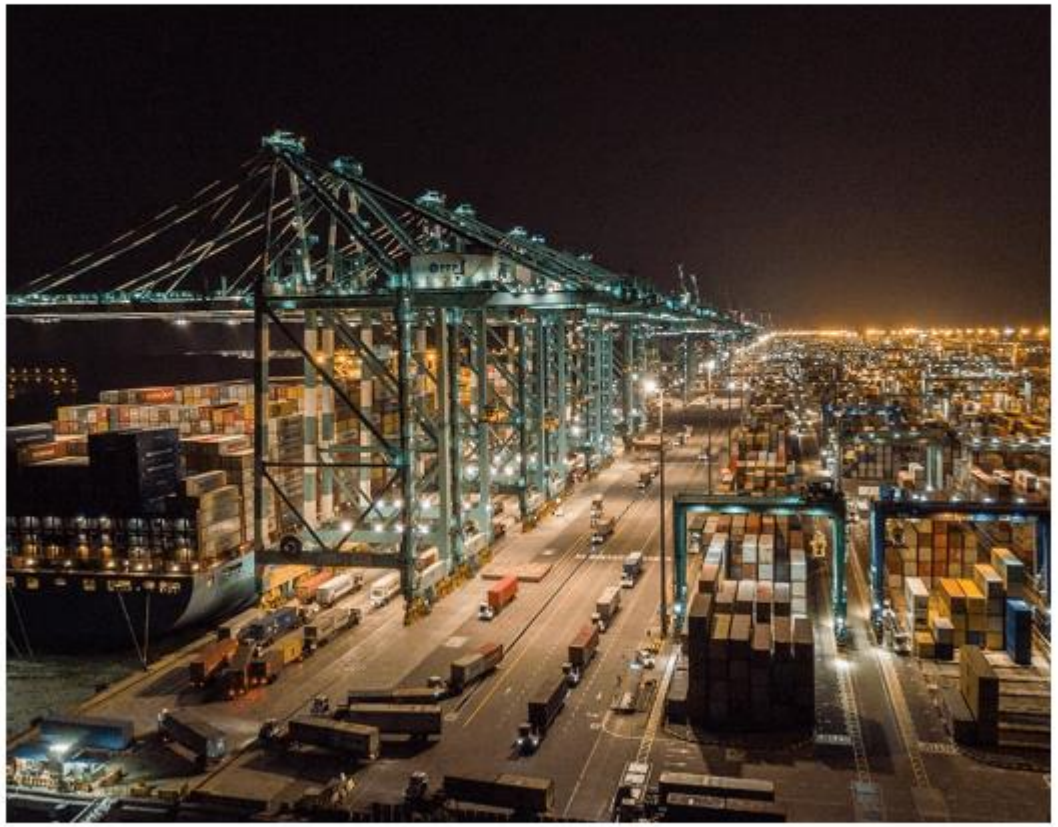
By Dom Magli

The Port of Tanjung Pelepas (PTP) has set a new record by handling 1.11 million TEU in July.

In PTP's previous high of 1.07 million TEU, achieved in May of the same year, is followed by this new record.

Port of Tanjung Pelepas achieves new shift volume records

October 17, 2023

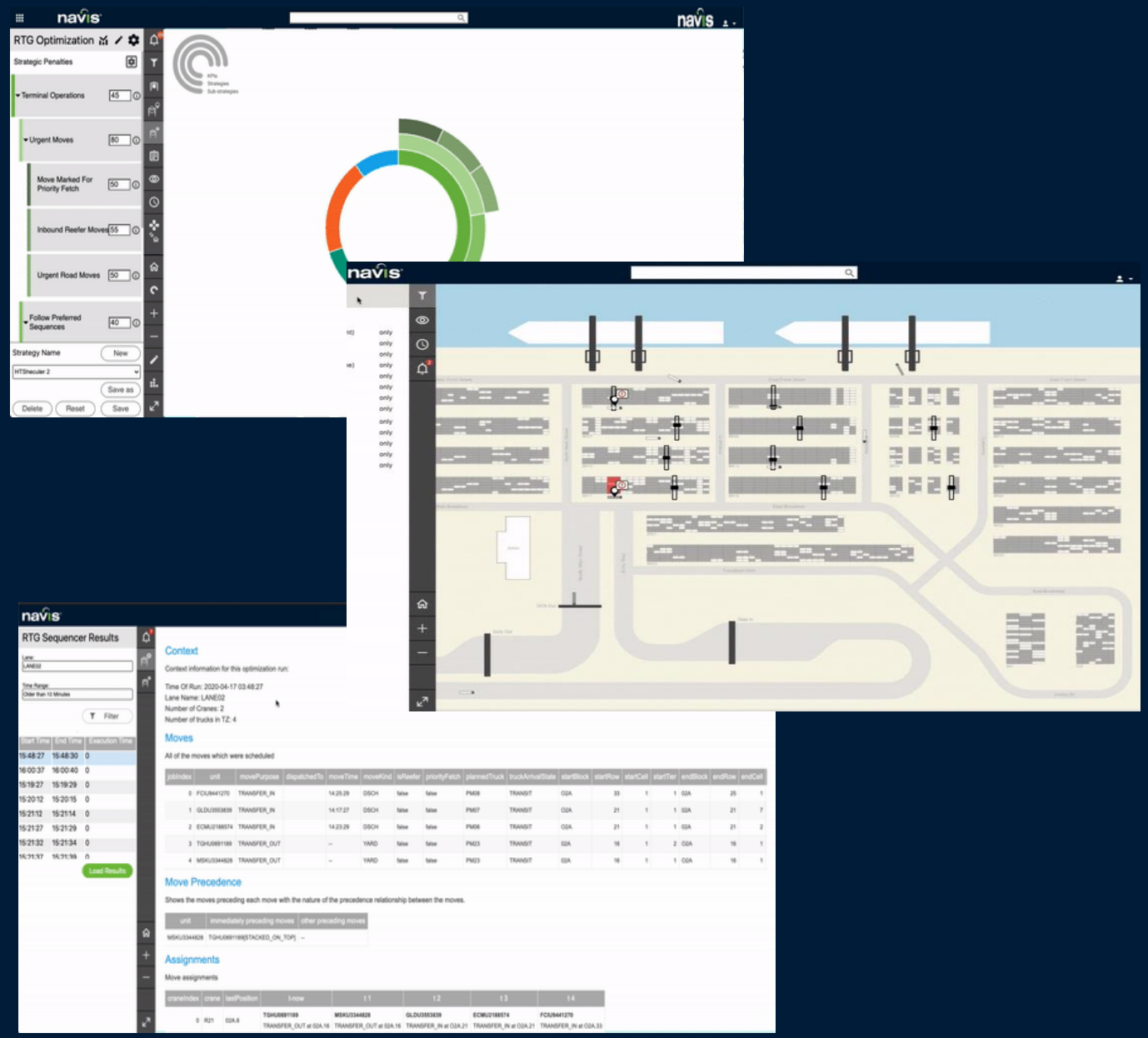


Port of Tanjung Pelepas

Port of Tanjung Pelepas Sdn Bhd (PTP), a joint venture between MMC Group and APM Terminals, sets a new shift volume record with 13,700 quayside moves in a single 12 hours

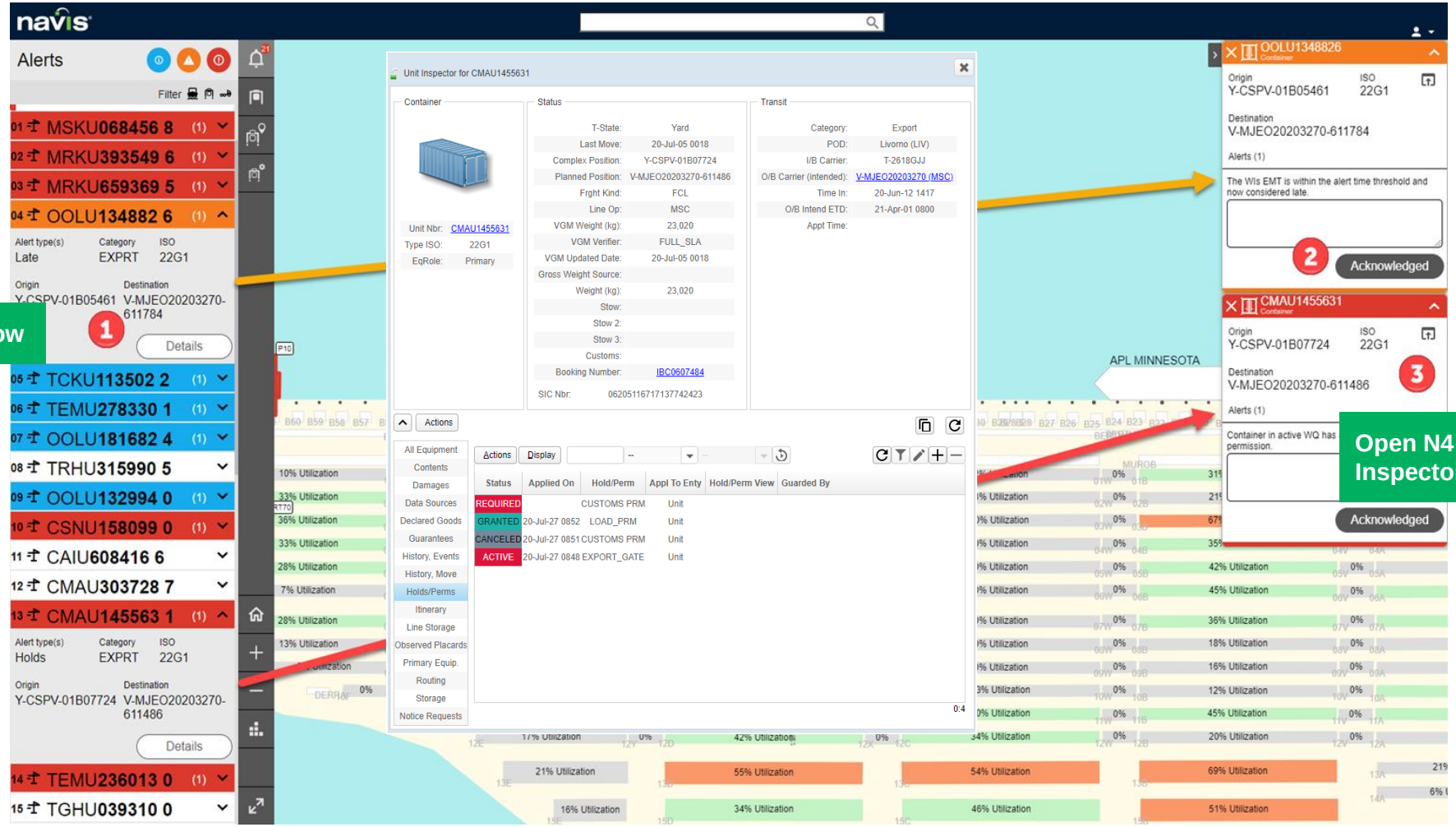
RTG OPTIMIZATION

- Real-Time Operations Visualization
- Demand Forecasting
- Alerts & Notifications
- Exception Handling
- Intuitive Configuration
- Optimization Diagnostics
- Predictive Rehandles
- Data-driven Decision Making
- Equipment Deployment Recommendations



Visibility – Proactive Exception Handling

Real-time Data Visibility Combined with Ability to Act on Issues Right Away



Open detailed window

Add information that is stored and visible via N4 All Alarms

Open N4 Unit Inspector

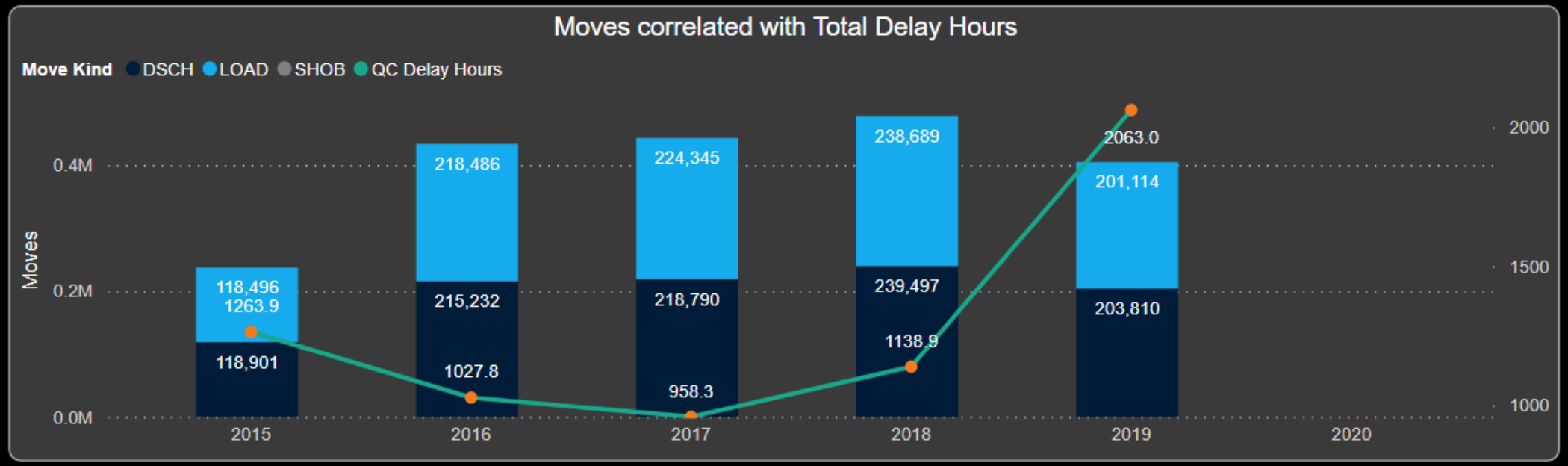
Delay Correlation

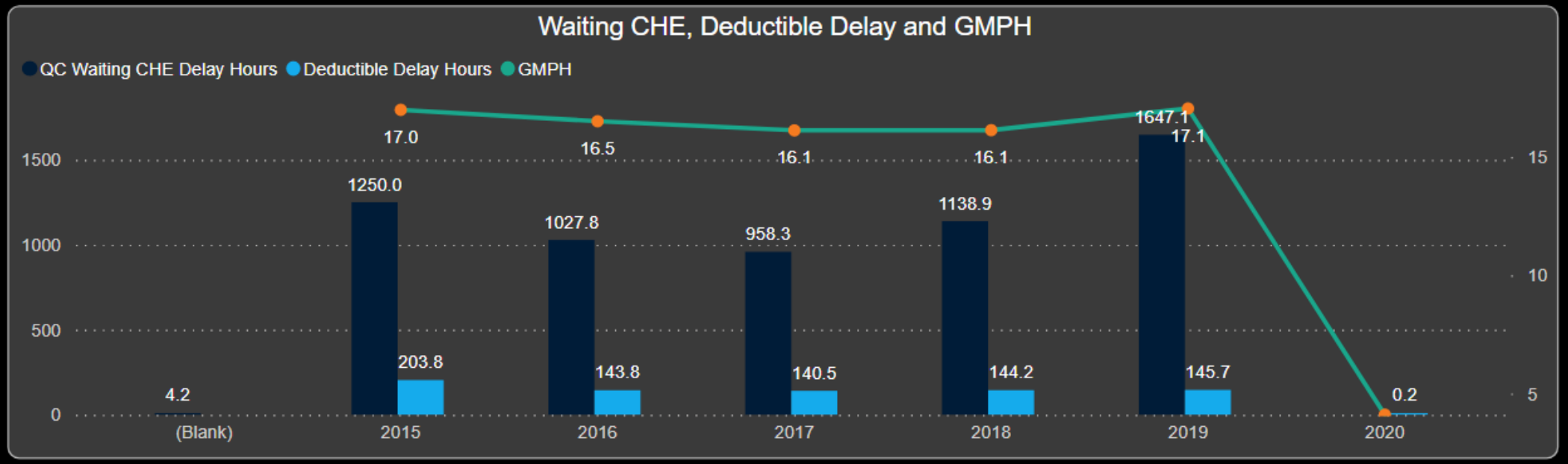
Facility: - LIVERP

Last update: 16 Oct, 09:50

QC

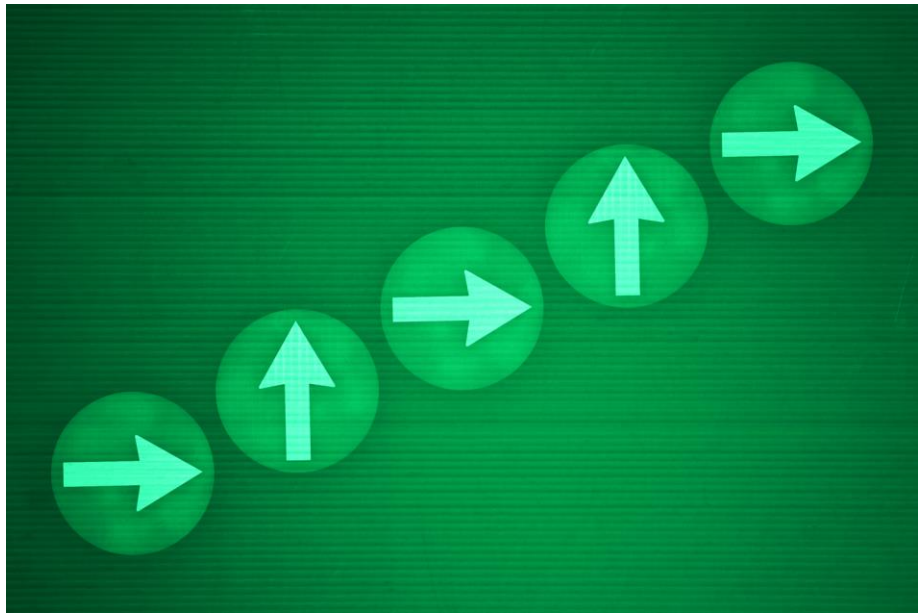
All



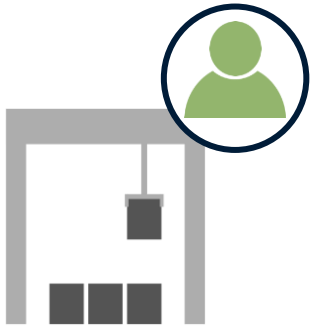


Every Terminal's Journey is Different

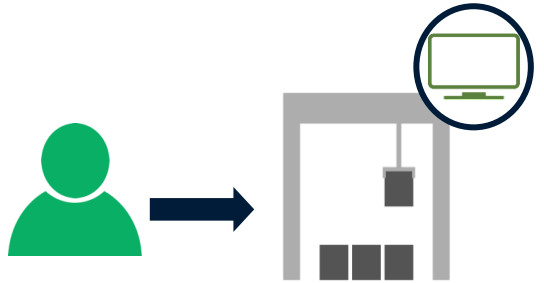
Supporting any stepwise deployment



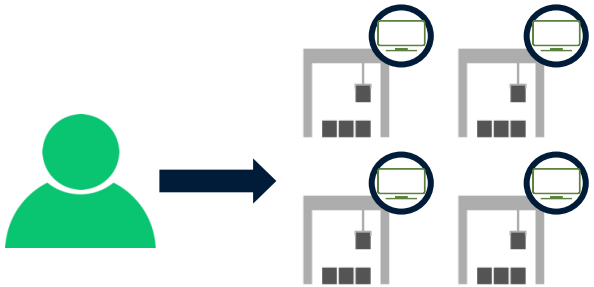
What are the automation steps you are considering?



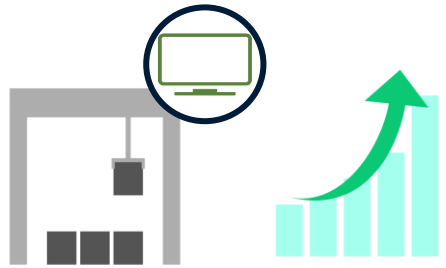
Conventional **RTG Sites**



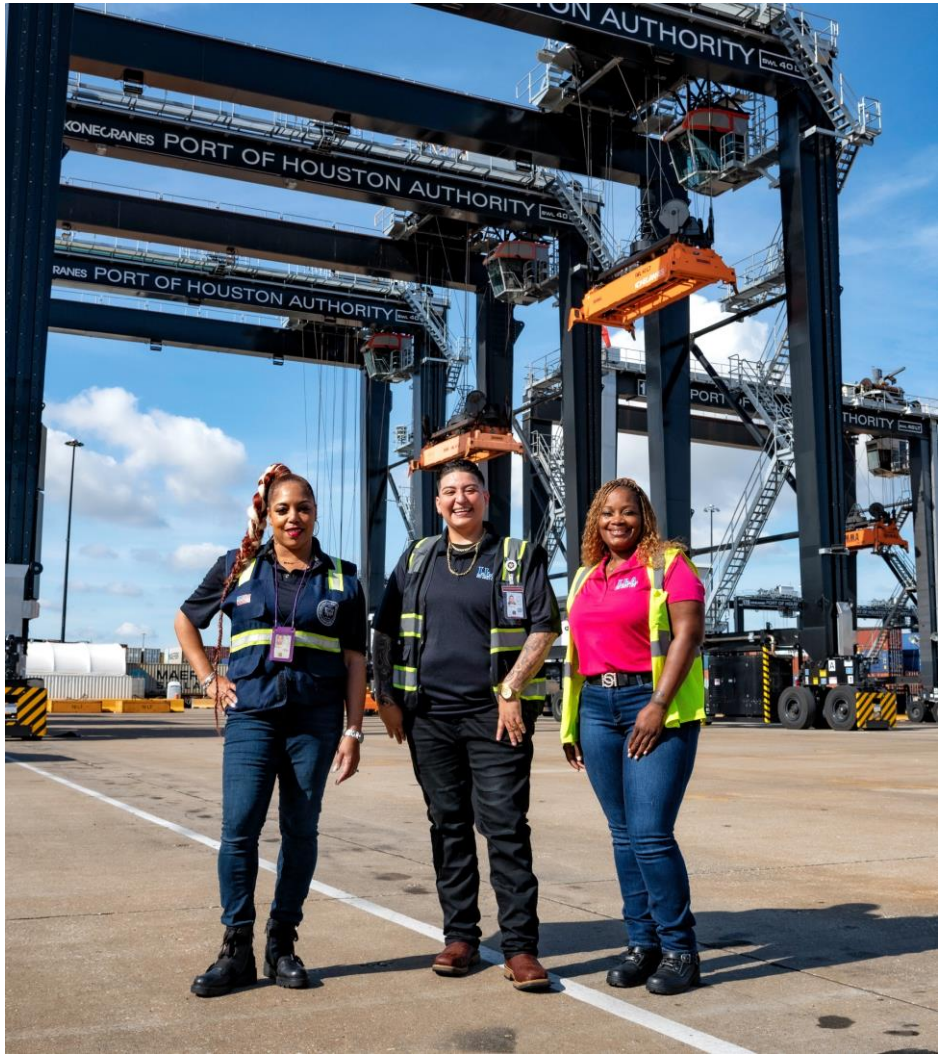
Remote Control **RTGs**



Pooled Driver Remote Control RTGs



Automated RTGs



RTG-O: Elevating Efficiency, Empowering Decisions, and Redefining Terminal Dynamics for the Future

RTG Optimization delivers **real-time insights** for informed decisions, overcoming manual operation limitations.

Optimal distribution of RTG workload **maximizes resource** use, **minimizing downtime.**

Seamlessly assign tasks to the right RTG, **boosting operational productivity**.

Ensure job assignments align with key performance indicators for **consistent goal achievement**.

Strategically employ RTG fleets, **reducing cost per TEU** through efficient resource allocation.

Tailor job lists to terminal priorities, supporting diverse operational strategies.

RTG Optimization facilitates a smooth transition to automation, allowing **flexibility in planning and budgeting**.

Thank You

Stay Connected: Follow Us!

KALERIS
www.kaleris.com

LINKEDIN
linkedin.com/company/kaleris
linkedin.com/company/navis

YOUTUBE
youtube.com/kaleris
Youtube.com/navis

TWITTER
@kalerisofficial
@naviscargo

INSTAGRAM
@navislp

NCC
collaboration.navis.com