



PORTLINK SOLUTIONS

Enabling Objective-Oriented Efficiencies Across Container Terminals

Q2 2025

www.avlino.com



Container Supply Chain: State of Play

The Container Terminal Industry is undergoing a profound transformation, driven by climate change, safety concerns, and geopolitical uncertainty.

Digital technologies and Optimization:

- **Enhancing efficiency and resilience**
 - Streamlining Operations,
 - Improving Resource Allocation
- **Enhancing environmental sustainability**
 - Reducing energy consumption
 - Minimizing emissions



10-year experience
and trusted partner



Avlino developed PortLink Solutions to realize Objective-Driven operational optimization

Numerous global Container Terminals have realized 25% KPI improvement with AICON



We deliver **objective-oriented optimization** that enhances operational systems and decision-making, to increase **Container Terminals productivity and efficiency**



PortLink Solutions combines domain knowledge and objective-oriented optimization to **eliminate** re-planning and **TOS parametric configurations**



PortLink Solutions natively integrates with the existing TOS, and **guarantees** the desired **operational KPIs**



Headquarters
New Jersey, USA

Design Centers
Bengaluru, India
Porto, Portugal

Expertise
Objective-Oriented Design
Optimization Techniques
Algorithmic Refinement
Big Data Engineering
Cloud Infrastructure

Revenue Model
Software-as-a-Service



PortLink Solutions – Uncompromised Efficiency

Scaling throughput with minimal equipment utilization and fastest turnaround times

Easy to Use

PortLink is an Optimization Solutions suite that works as a **TOS Plug & Play**, containing a set of cross-functional modules that operate on a stand-alone basis or stacked as a complete solution.

Data-Driven

PortLink's Optimization Modules, assimilate data from TOS, Management and Operational subsystems & external sources to **enhance operational efficiency across the Terminal**.

Adaptive

Compared to rules-driven TOS, PortLink's optimization techniques and algorithmic refinement quickly and **continuously adapts to dynamic business goals**.

Secure

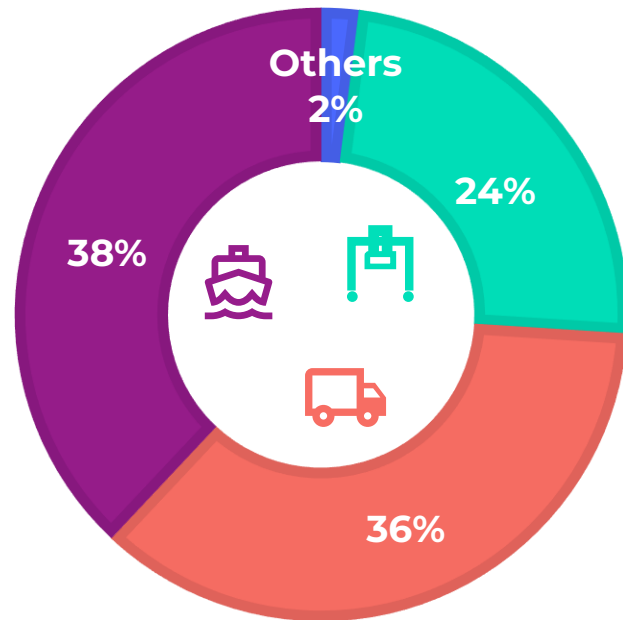
PortLink Solutions are deployed on **100% secure public or private Cloud** instances. Additionally, each Terminal has a **separate Cloud instance**, isolating data 100%.



Supporting Sustainability

PortLink Optimization Modules support the reduction of carbon emissions and equipment wear and tear

AVERAGE BREAKDOWN OF EMISSION SOURCES IN A CONTAINER TERMINAL*



*Source: [Reducing air emissions in a container terminal, Kalmar](#)

REDUCE EMISSIONS WITH PORTLINK



- Improve port call visibility to coordinate vessel speeds and arrival times with terminal availability.
- Expand berth utilization to reduce vessel waiting time.



- Optimize container placement to reduce unproductive moves.
- Improve resource allocation to minimize equipment utilization and travel distance.

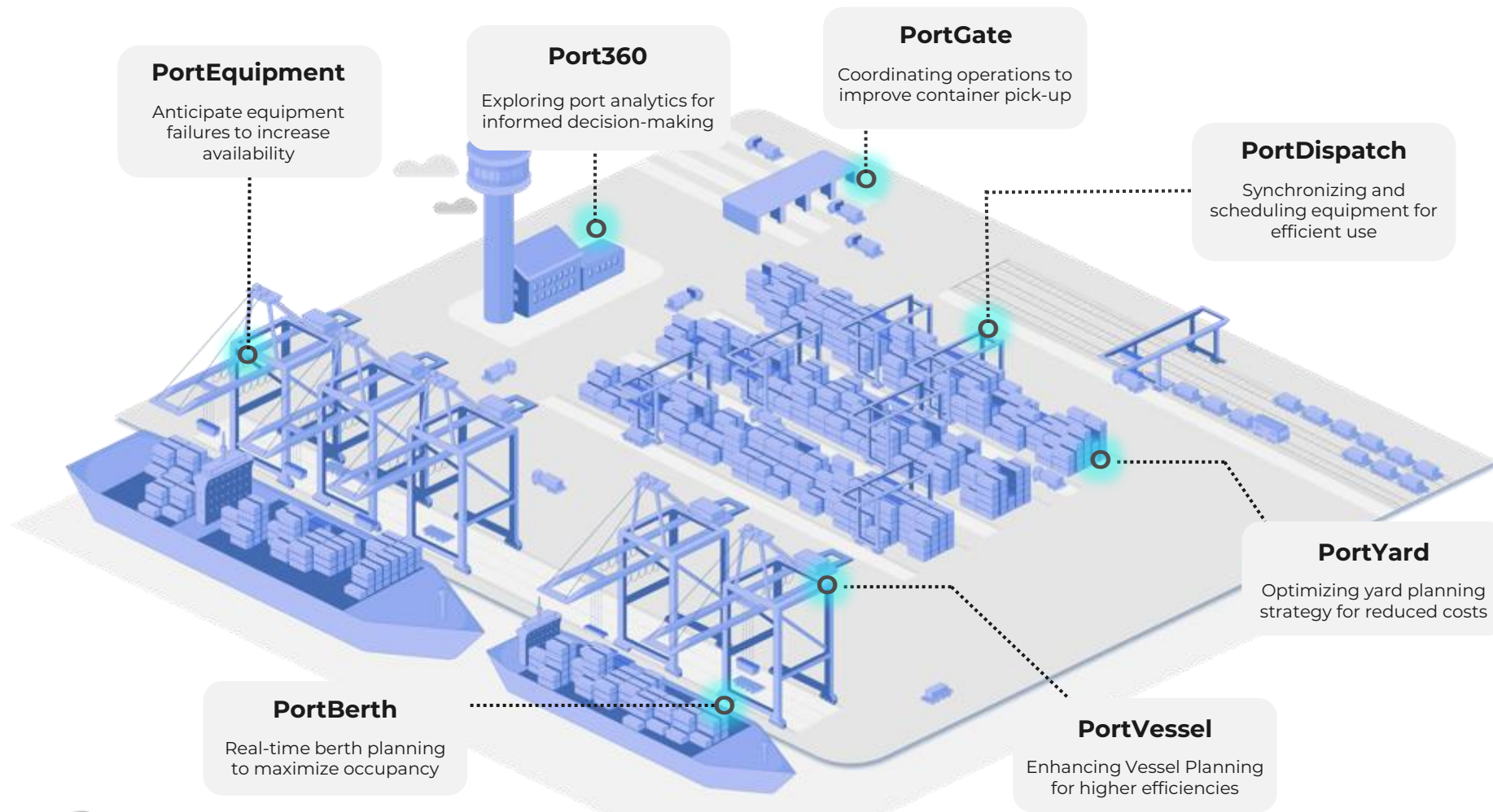


- Decrease idling time for waiting trucks to reduce turnaround time.
- Optimize vehicle flow through the terminal to reduce congestion.



PortLink Solutions: a Plug-N-Play TOS-Overlay suite

PortLink Optimization Modules can operate in stand-alone mode to deliver a specific KPI improvement, or can be cascaded to deliver a terminal wide KPI improvement



PortLink Optimization Modules

Integrates with TOS and sub-systems and makes optimized operational decisions

Adapts to changing input conditions

Learns from the past and eliminates inefficiencies before they arise



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PortLink Solutions – Value Proposition

PortLink Optimization Modules deliver improvement in KPIs such as reduced Rehandle count, higher GMPH, lower unladen travel distance, uniform utilization etc.

Maximizing Equipment Availability:

Anticipating failures and anomalies to reduce operational stoppages and corrective maintenance.

Driving Continuous Improvement:

Monitoring KPIs, Identifying Constraints, and Fostering Efficiency

Streamlined Operations in Real-Time:

Improved container flow to reduce congestion and reduce turnaround time

Enhanced Resource Management:

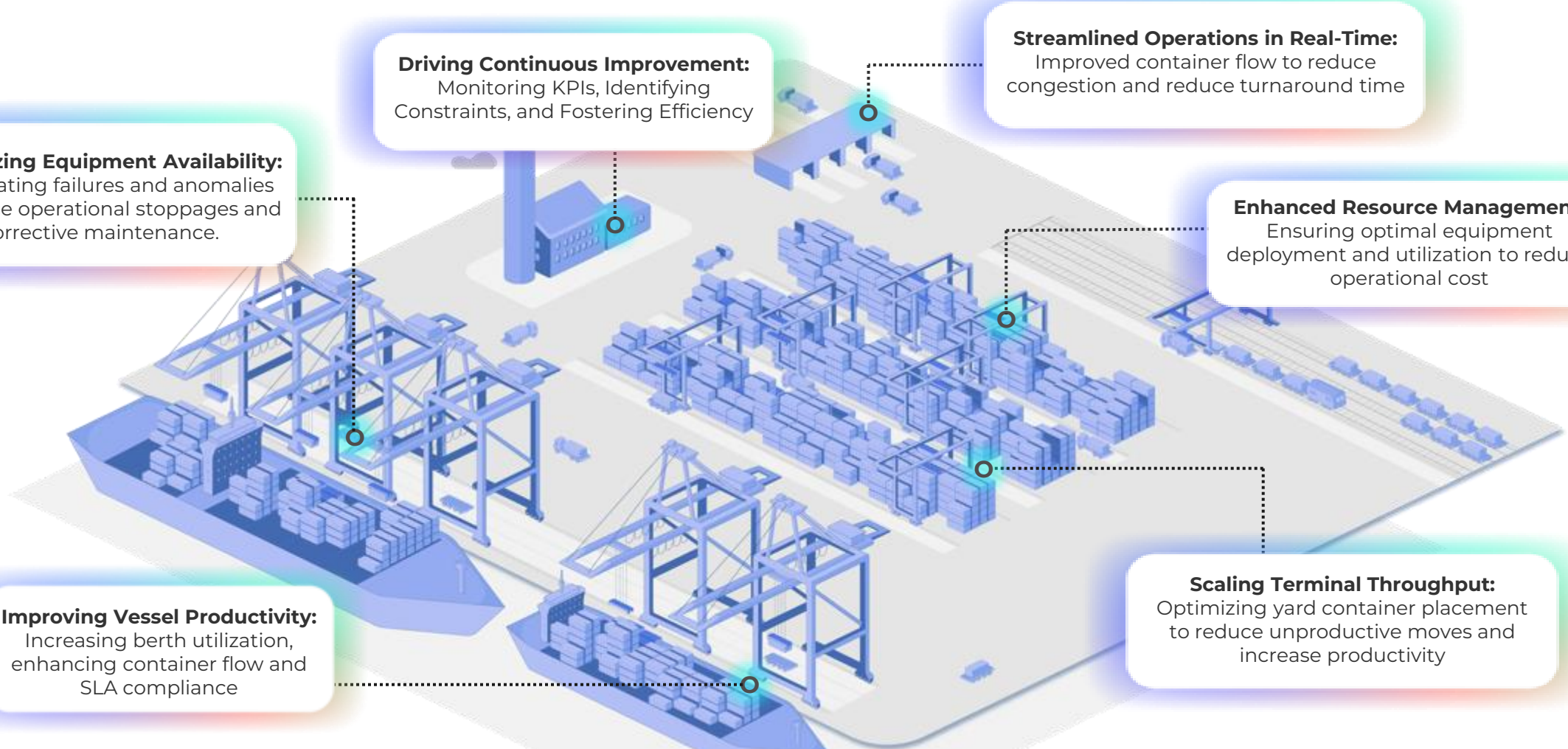
Ensuring optimal equipment deployment and utilization to reduce operational cost

Improving Vessel Productivity:

Increasing berth utilization, enhancing container flow and SLA compliance

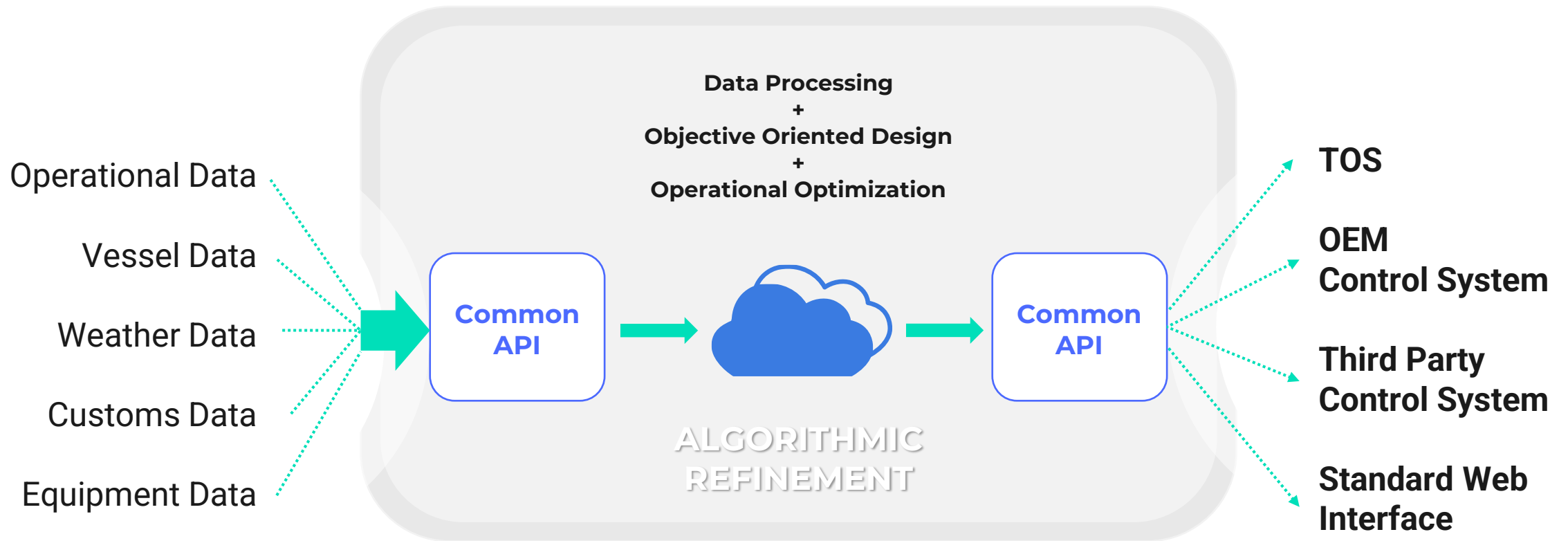
Scaling Terminal Throughput:

Optimizing yard container placement to reduce unproductive moves and increase productivity



AICON has a plug-N-play reference architecture

AICON deployment requires ZERO operational changes, ZERO code modifications, and ZERO Capex



PortLink Security: Trusted, Secure, and Reliable

As a 100% Cloud native solution, PortLink Solutions uses the highest encryption standards, and multifactor authentication.

Commitment to Data Security

- We ensure data security through strict cybersecurity standards.
- Protocols are regularly audited and updated for safety and confidentiality.
- Comprehensive controls safeguard all systems, maintaining compliance.

Secure Data Integration

- PortLink integrates first-party data with secure third-party sources like weather, vessel positions, tides, and bookings.
- Connections are protected to maintain data integrity and privacy.

Proven Reliability

- PortLink's security framework ensures smooth, reliable operations while protecting sensitive data.
- It combines top-tier cybersecurity with operational efficiency for your terminal.

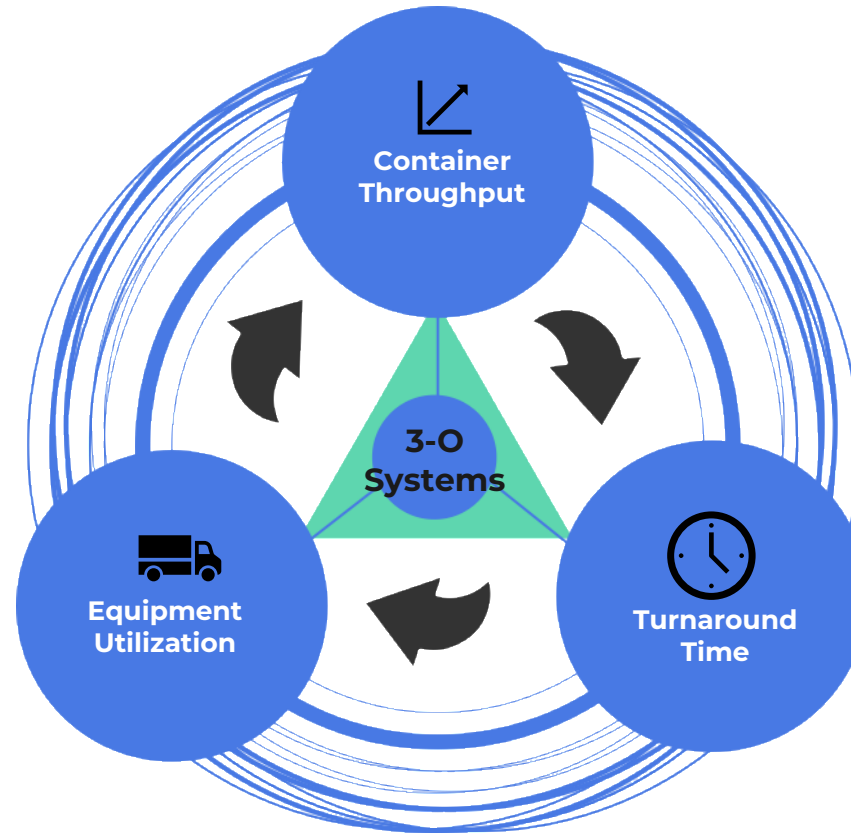


PortLink – Changing the Terminal Operations Paradigm

PortLink Solutions constantly rebalances your operational logic to attain higher throughput with minimal equipment utilization and faster turnaround times

Before Objective Oriented Optimization

- Business KPIs were static
- Software and operational logic drove business outcomes



Before Objective Oriented Optimization

- Business KPIs are dynamic and can be varied
- Business objectives drive the operational logic



Smart ROI: Fast Implementation, Faster Results

Based on operational KPI improvement PortLink Solutions deliver measurable ROI in 4-6 months



Choosing PortLink Solutions: The Logical Step for Optimal Efficiency

Seamless and adaptable

- Non-intrusive, easy-to-use and adaptable to any operations mode: Manual, Semi and Fully automated.
- Deployment modes: Cloud, In-house, or Hybrid.
- Cross-functional stackable modules.

Cutting-edge technology

- Iterative performance adjustment via algorithmic processes
- Deeper workflow insights through intent-aligned decision modeling
- Actionable output with optimized operational commands.

KPI alignment

- Conformance with Customer SLA's.
- Business KPIs drive operational logic by ongoing management of demand-based trade-offs.



THANK YOU

Contact us

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Appendix A

Customer Implementation Results

Client #1

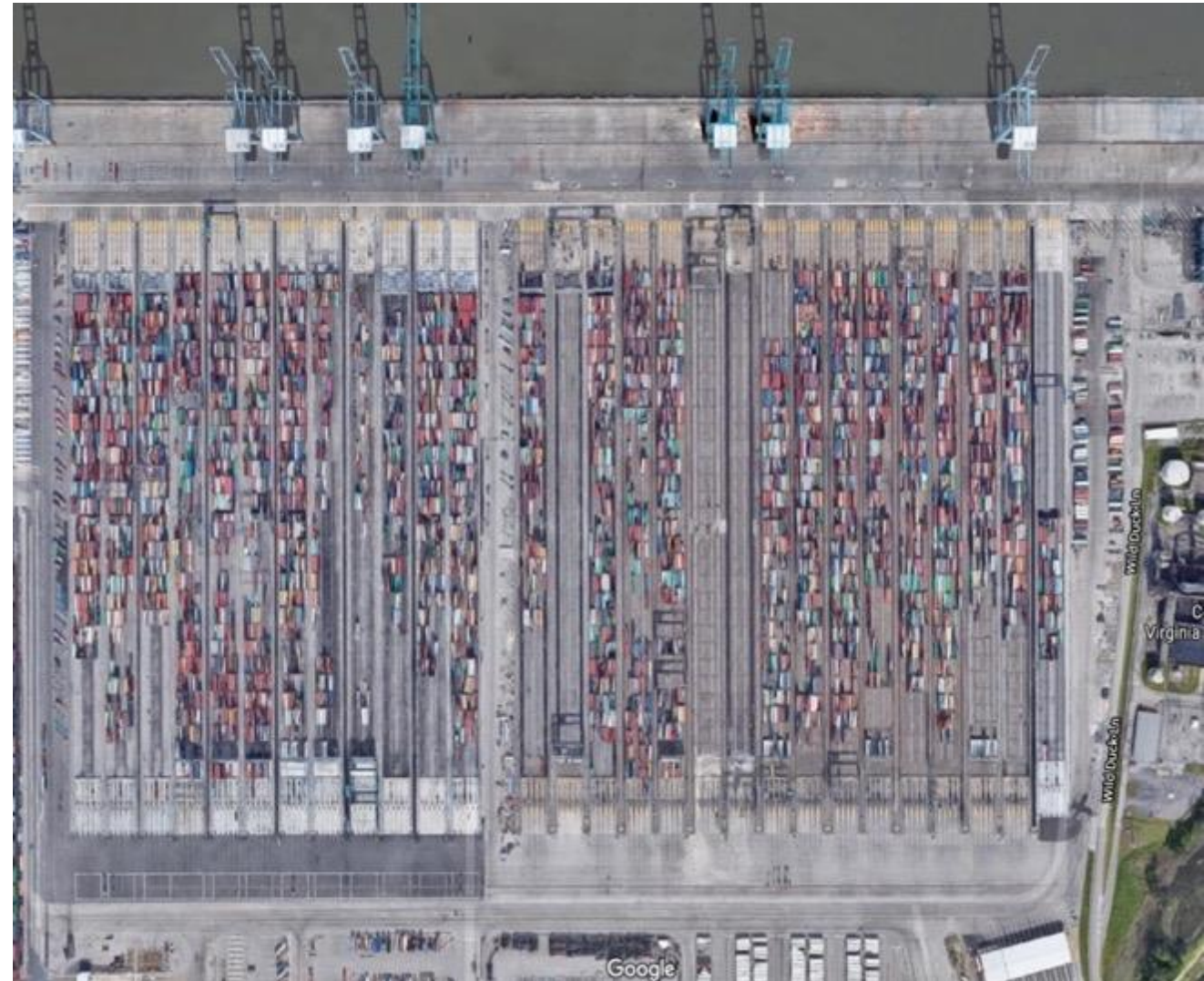
2.5M TEU ASC Terminal

Client Challenges

- 1) Gate Throughput was significantly constrained, especially during peak-time
- 2) Rehandle ratio, especially for import container delivery, was high

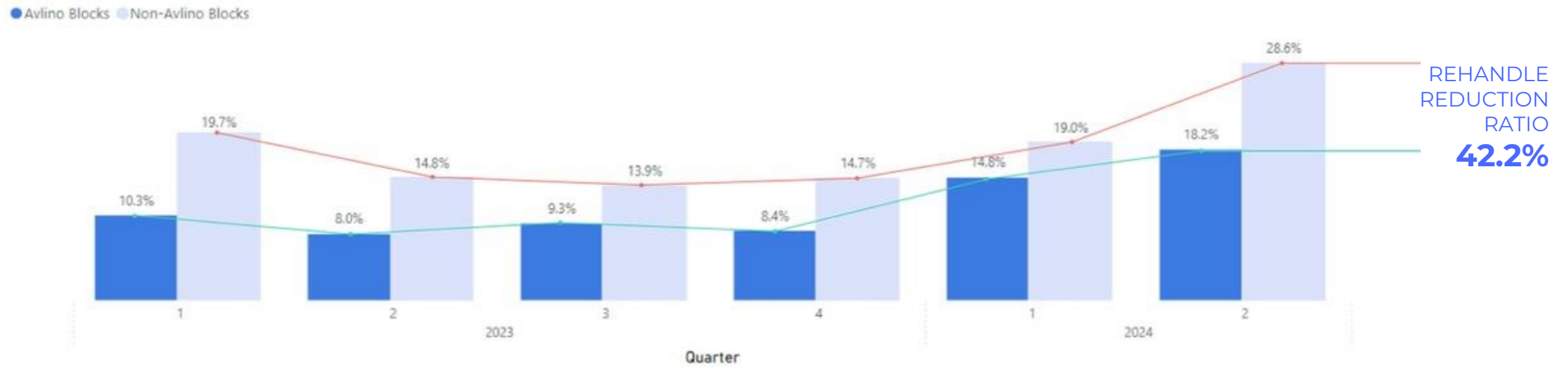
Avlino Solution

- 1) Avlino deployed PortYard



42.2% Reduction in Rehandles

Quarterly Rehandles per Delivery - Comparison chart



Client #2

Client Challenges

- 1) High load rehandles for export containers, and high rehandles for import deliveries
- 2) Out of Sequence ITV, and the consequential heavy-hook challenges

Avlino Solution

- 1) Deployed PortYard to reduce Shuffles and Rehandles challenge
- 2) Deployed PortDispatch to reduce out-of-sequence and heavy-hook challenge



Export Unproductive Moves and External Trucks Waiting Time Reduction

Combination of key PortYard Features*

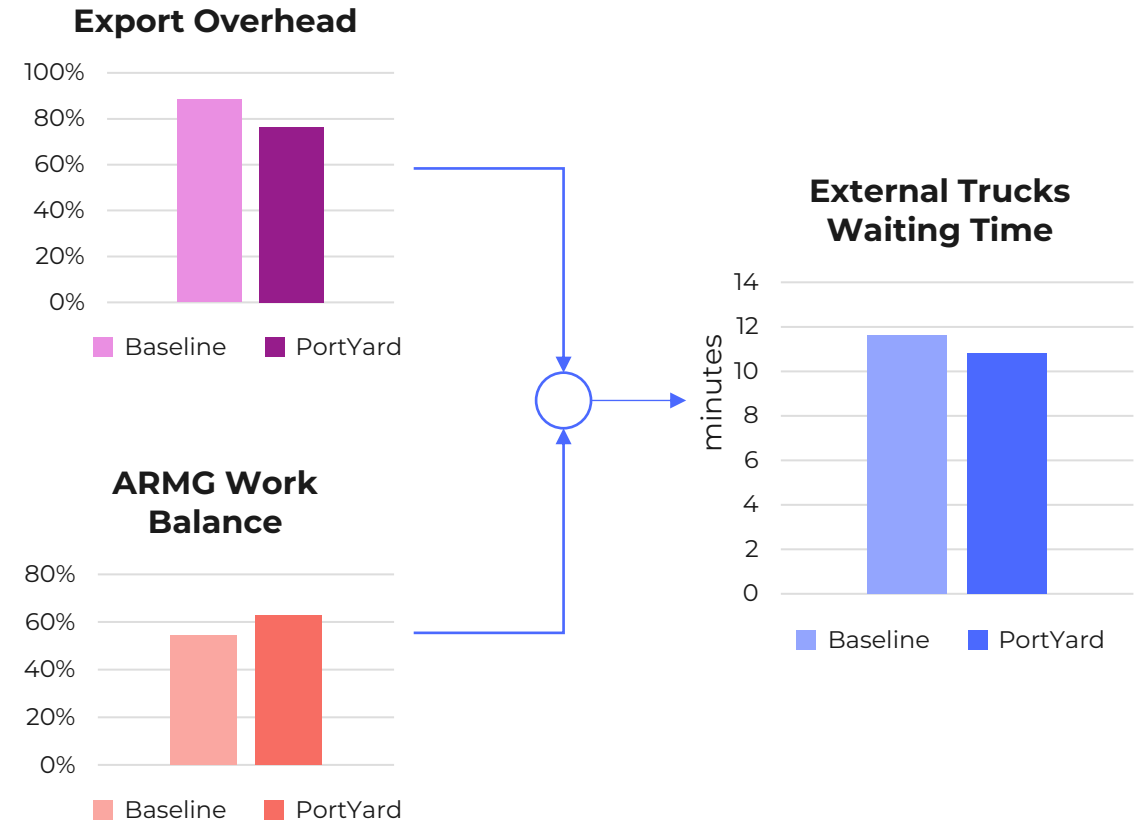
- Housekeeping and Stacking Optimization:
16.4% Less overheads
- CHE Workload Balance**:
7% Increase of optimal range operation

Outcome

- External Truck Waiting Time:
7% Reduction

* Comparison performed under the same yard utilization (~75%)

** ARMG Work Balance: % of time where work productivity was between 7 and 15 mph.



Client #3

1 TEU RTG Terminal

Client Challenges

- 1) High Yard utilization leading to high rehandles and high equipment utilization
- 2) Low Vessel and QC productivity

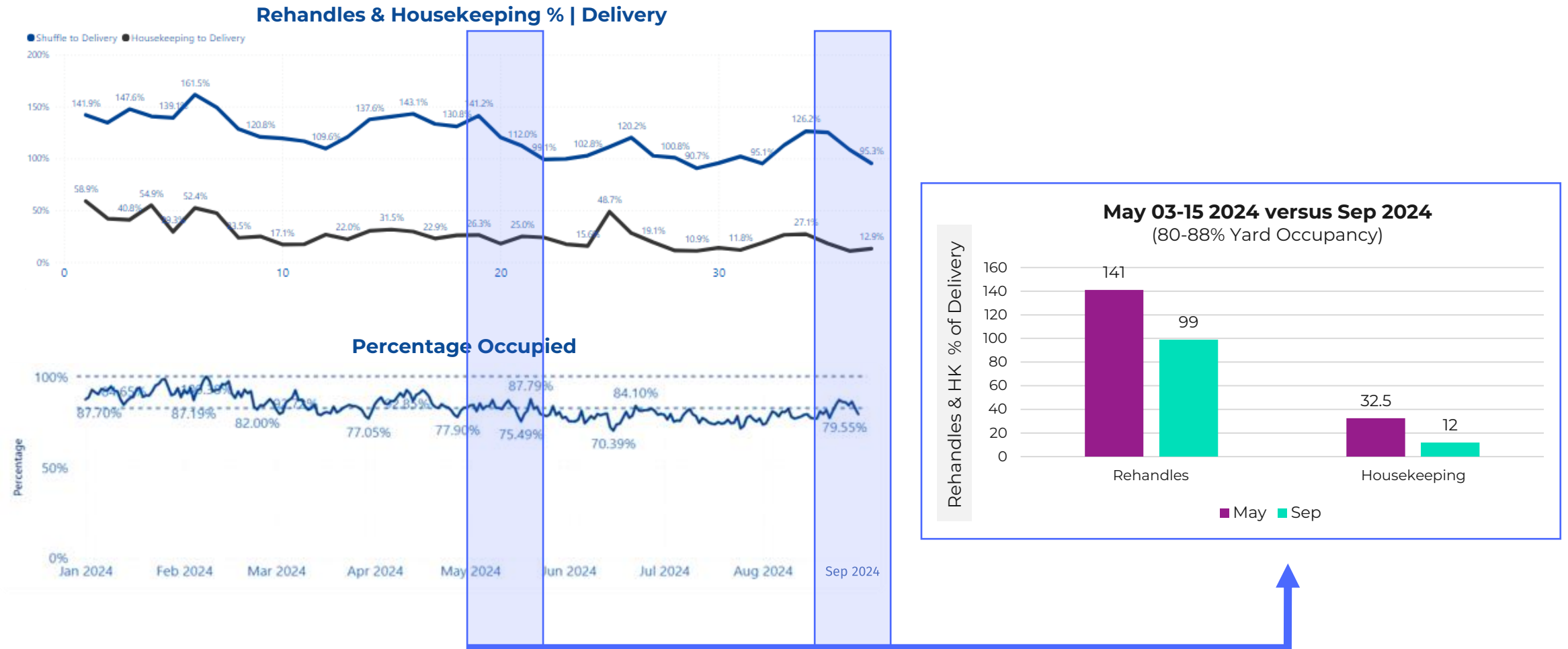
Avlino Solution

- 1) Deployed PortYard to reduce rehandles and address equipment utilization challenges
- 2) Deployed PortDispatch and PortVessel to improve Vessel and QC productivity



Import Rehandle Metrics

May 2024 versus Sep 2024: 30% reduction



Results measured from Aug 01, 2024

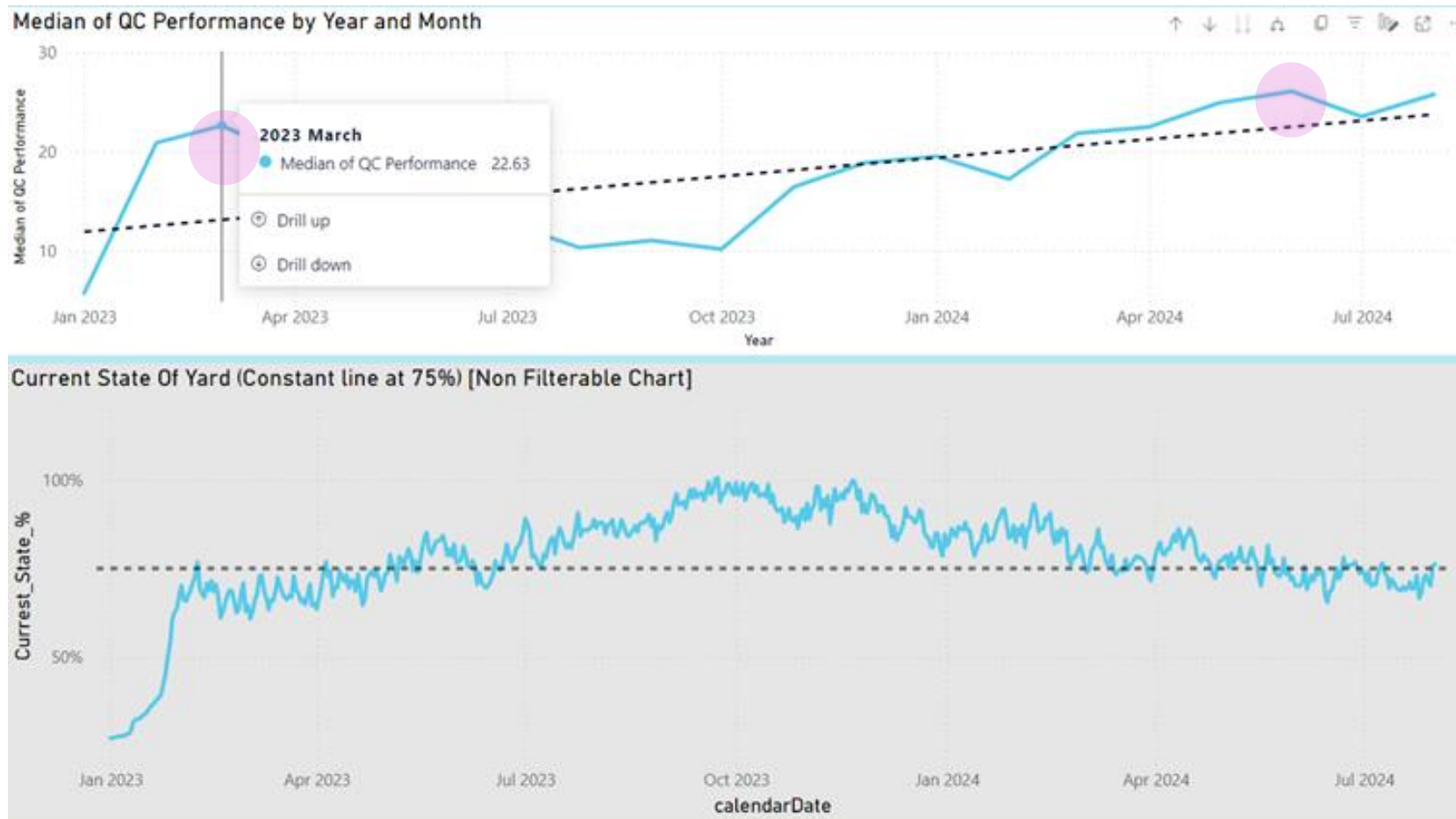


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QC GMPH Comparison

Aps-May versus Jul-Aug: 3 GMPH Increase (15% improvement)



Results measured from Aug 01, 2024



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