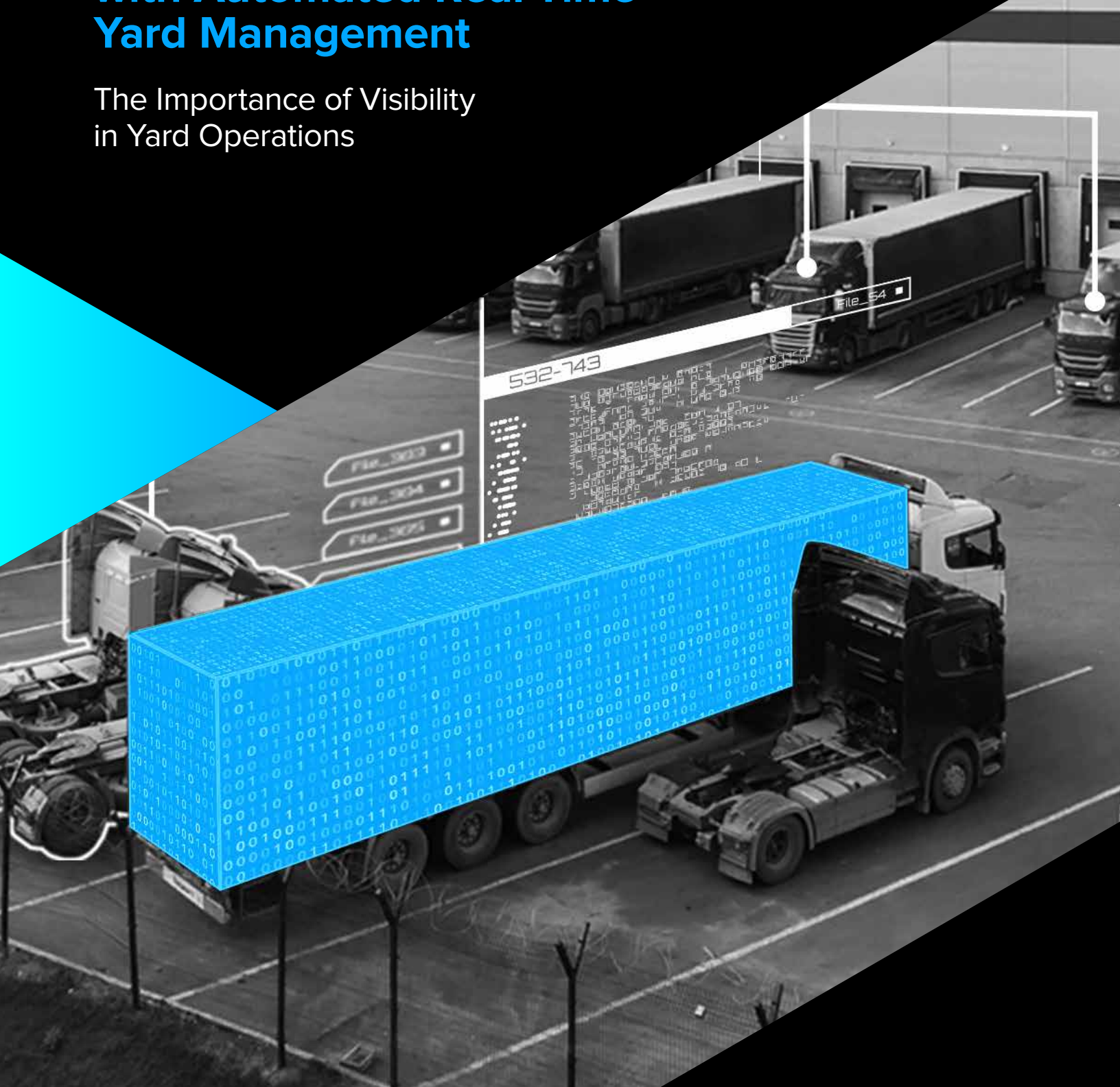




# Unlock New Efficiencies with Automated Real-Time Yard Management

The Importance of Visibility in Yard Operations





## The Importance of Visibility in Yard Operations

The terminal yard is an integral part of the transportation system. Previously thought of as a black hole in the supply chain between the transportation and warehouse management systems, yard management systems give much needed visibility to trailer and shipment location improving efficiencies and increasing profits.



## The Importance of Visibility in Yard Operations

When it comes to getting through the process of unloading and loading at a port, rail or truck yard, an effective yard management system is vital. Without one, cargo doesn't move efficiently which can create bottlenecks, affect distribution and increase expenses.

A hold up inside the yard due to inefficient processes and lack of insight and information can result in costly delays and dramatically impact the bottom line. In trucking yards, for example, trucks simply can't be idle for too long. When a truck is waiting to get into a yard, it uses more gas and emits CO<sup>2</sup>, which is expensive and can lead to severe fines and penalties. It also increases driver downtime and reduces productivity.

Yards vary in size from just a few acres of land to hundreds of acres. Given the sheer size of the yard, cargo is often misplaced throwing the entire ecosystem off balance. In addition, perishable cargo such as produce or refrigerated items must adhere to strict time schedules to ensure on-time delivery. Without having an automated way to document exactly what is in every truck and where it sits in the queue, yard management teams must spend extra time manually tracking down items and locating trailers across vast distances.

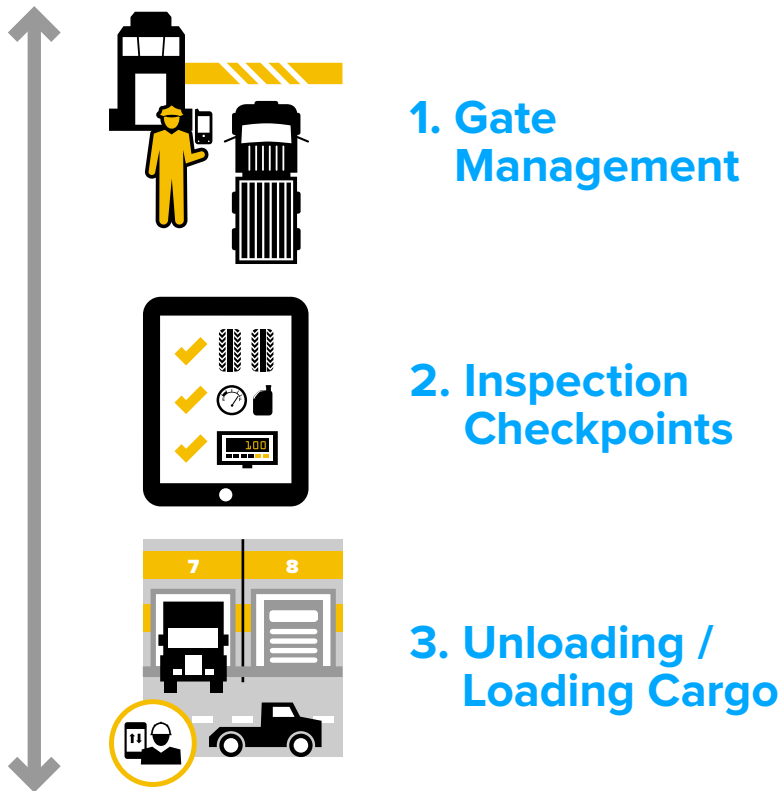
Yard management systems (YMS) track and manage assets, people and transactions through critical points in the supply chain. These systems facilitate the continuous flow of material and goods between a transportation system and a distribution centre or manufacturing plant supporting increased gate transaction speed, improve switcher productivity and ensuring accuracy by making sure the right trailer arrives at the right dock door at the right time.

## Bridging the Gap Between the Warehouse and Transportation Management Systems

When a truck arrives at the yard, it goes through a series of checkpoints before it can unload its cargo and pick up a new trailer. The first stop is the gate, where it is checked into the system. Next, the trailer is brought to the inspection area where it is weighed and examined for any imperfections or safety issues. A hostler then moves the trailer to a dock or a staging area. If it's the latter situation, the trailer waits until the switching system alerts a hostler that the dock is ready. At that point, the hostler takes the trailer to the correct dock for unloading. Once complete, instructions provided by the switching system inform the hostler driver to take the trailer to another dock for loading or back to the staging area.

### Warehouse Management System

Yard Management System



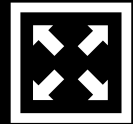
### Transportation Management System

## 5 benefits of an automated yard

### 1. Automatic parking assignments



### 2. Increase space utilisation



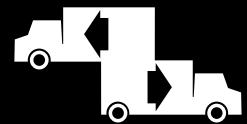
### 3. Directed task assignment



### 4. Door-to-door moves



### 5. Inbound and outbound scheduling





## Tackling Today's Challenges in the Yard

Yards are extremely busy places with scores of vehicles, cargo and people moving throughout a terminal. When one process fails, it can negatively affect all aspects of the operation and inhibit an operator's ability to deliver shipments on a timely basis. All the while, the safety of trailers and workers must be top of mind. A disruption of service due to a trailer going to the wrong dock, for example, requires the hostler to remove it and make room for the right one, which is why dock door management plays such a crucial role. If a trailer is entered incorrectly into the system at any point on its journey, it can cause disruption, which is why the Warehouse Management System (WMS), Transportation Management System (TMS) and the YMS must be able to effectively communicate with each other. These issues and a variety of other challenges can adversely impact efficiencies and cause expensive delays.

### Congestion

As the e-commerce phenomena continues to grow, the amount of goods moving through the supply, chain and transport system is rapidly expanding. At the same time, truck yards have a finite amount of space and that footprint isn't changing, making congestion inevitable. Truck yards need to accommodate more cargo and larger trailers within the same space.



### Inspections

A crucial part of yard management is inspecting each truck as it enters the yard for such things as chassis and trailer damage, safety issues and load contents. Documenting the condition and contents of each trailer helps determine where in the yard the truck should be directed to and what order it should be unloaded. Damaged trailers or chassis can be sidelined for repairs, whereas perishable goods can be unloaded quickly if needed.



### Logistics

Dock management is key to running a successful truck yard. Delays can occur when a trailer is directed to the wrong dock to dropoff or pick-up cargo. Dock management software ensures a trailer is docked securely and ready to be loaded, while Bluetooth low energy sensors alert people to stay out of harm's way.



### Operational Efficiencies

The goal of a trucking yard is to get trailers in and out of the facility as quickly and safely as possible while ensuring they have the correct cargo. Industry changes and increases in volume make this difficult to accomplish without a robust YMS that automates the process and seamlessly ties into the WMS and TMS.



## Achieving a performance edge in Yard Management Services

At Zebra, we've developed a YMS that uses automation in conjunction with barcodes and RFID tags to streamline the entire process and accelerate movement of trucks and trailers through the yard. Mobility is instrumental to the success of a YMS.

Whether it's enabling communications through Push-to-Talk (PTT), adding RFID tags to trailers to automatically track their location inside the yard, or sending alerts to dock and hostler workers on their mobile devices, Zebra and our team of seasoned professionals can help design, plan, install and implement a YMS that increases operational efficiencies, accelerates worker productivity and saves both time and money.



### Real-time Locating Solutions (RTLS)

Track trailers via their RFID tags and gain real-time asset and performance intelligence throughout the yard and beyond. Automating visibility to your critical assets allows you to ramp up productivity, boost efficiency and add flexibility to your operations.



### Yard Management System Software

This server-side solution helps yard managers synchronise operations, loading docks and gate check-in. The software streamlines the continuous flow of cargo through a yard creating efficiencies and reducing costs.



### Mobile Computing

Handheld devices and tablets enable workers to stay connected to backend systems, monitor operations, enable communication through PTT and send alerts.

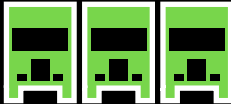


## Expediting Yard Management Services



### Reduce Warehouse Overtime

Zebra's dock management system provides automatic door assignments based on availability. When docks are occupied with trailers, that means less downtime for dock workers and fewer reloads.



### Increase Yard Throughput

With the large volumes of cargo going through a truck yard, having accurate and timely information about yard resources is essential. Zebra's YMS includes the ability to create flexible business rules so equipment and product can move through the yard quickly and safely.



### Limit Detention Expense

Proper scheduling and exception management functionality reduces driver wait time which means less detention costs.



### Ensure Container Visibility

Using RFID tags or barcodes on trailers helps produce effective asset knowledge of inventory and service history. The YMS working in conjunction with the WMS and TMS gains insights into what is being transported and can estimate arrival time. Knowing the type of cargo a trailer or container is bringing into the yard before it arrives enables all resources in the yard to be prepared, which reduces downtime.



### Maximise Space Utilisation

Maximising the use of existing yard real estate by using a YMS reduces operational expenses and limits bottlenecks. Effective yard management also eliminates the need to secure more property, an expensive and often unattainable resource.

# ZEBRA MOTIONWORKS™ Yard

At Zebra, we understand your yard is in constant motion. And now you can secure a continuous flow of material and goods within your yard and ramp up planning, productivity and profit. With Zebra MotionWorks Yard.

Manage everything critical to your operation in real time. And, get insights you can put into immediate action. With greater efficiencies, you'll optimize space and turnaround times, increase throughput and drive costs down. And put your enterprise miles ahead of the competition. Use actionable insights to automate and optimize operations, fine-tune processes and sync your staff, systems and shipments. With Zebra MotionWorks Yard.



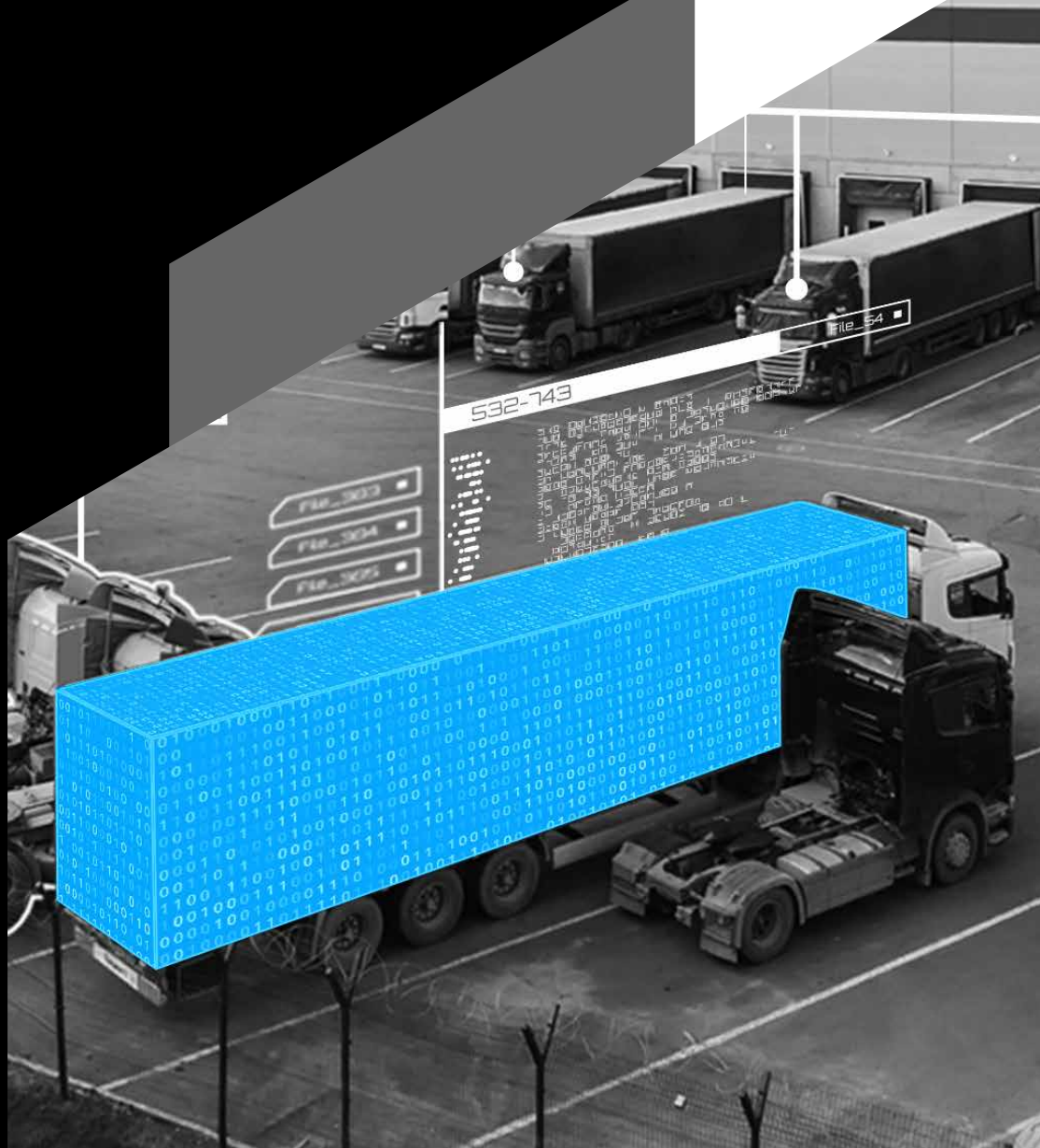
Automate the majority  
of trailer moves



Increase  
throughput without  
increasing space



Significantly reduce  
switcher expenses





## Stay connected. Stay in control. With Zebra's end-to-end solutions.

Zebra MotionWorks provides expertise to build and implement end-to-end location solutions that not only automatically sense the location of your assets and inventory, help improve the safety of your people and streamline your production line, but also allow you to ramp up productivity, boost efficiency and grow your business. By delineating that data to arm your enterprise with actionable insights so you can optimize your business at the performance edge.

We have the hardware to capture data, including Zebra's many sensing, tagging and mobility technologies, and utilize third-party technologies as well.

Zebra's Savanna Location Engine captures the location data and, using proven algorithms and rules engines, it derives actionable information and business context from the data gathered and provides a common set of outputs to share with applications that need this data.

Success in any intelligent edge solution requires a knowledgeable set of professional services to truly be successful. Zebra MotionWorks is no exception.

Zebra provides a set of Location Solution-specific professional capabilities as part of its Signature Services portfolio. With these, you can be confident that the unique services necessary for the successful business outcome of your location-based solution are available when you need them.





## Complete container visibility with the power to transform your yard operations.

Zebra provides visibility into the location, health and performance of each asset, package, trailer, and worker within your yard. But more than visibility, Zebra's Yard and Terminal solutions provide real-time actionable data that keeps you ahead of today's demands. The result? A complete system that provides line-of-sight into every component of your shipment – from asset arrival, departure and each step in between – for visibility that allows managers to orchestrate a safe, secure and efficient yard.

Contact us today for more information on how Zebra can help you improve efficiencies and visibility for yard management.



**Lowry Solutions**  
+1 888-881-2477  
[info@lowrysolutions.com](mailto:info@lowrysolutions.com)

