



BPD ZENITH

# ENTERPRISE ASSET MANAGEMENT FOR SEA PORTS

World trade is hugely dependent on sea ports. Without thousands of shipping containers arriving every day, transferring items around the planet, the economy of almost every major country would break down.

Many of the busiest ports in the world are larger than cities on the mainland. In Europe, the three largest ports (Rotterdam, Antwerp and Hamburg) all have over 100,000 employees, ranging from maritime pilots and crane operators to longshoremen and coast guards, and hundreds more roles in between.

In the 20th century, all sea ports worldwide used a paper-based system, but this approach has become increasingly uncommon in the modern day. Instead, municipalities, governments and port operators are utilising advancements in technology, alongside growing focus on health & safety – all of which can be facilitated by a state-of-the-art Enterprise Asset Management (EAM) solution.

## **What benefits does Maximo Application Suite (MAS) provide to Sea Ports?**

Enterprise Asset Management (EAM) solutions can be integrated with other important applications, such as terminal operating systems, health and safety systems, fuelling systems, barcode systems and crane management systems.

By joining all major software together in one failsafe EAM system, it means that everyone accesses the same live data, wherever they are in the port.

Some of the main benefits that Maximo Application Suite offers to sea ports include:

- Maximise asset uptime and lifespan
- Optimise operational efficiency
- Improve health, safety and incident reporting
- Coordinate all movements down to the nearest centimetre
- Integration with all third-party software – e.g. ERP, Finance and/or Reporting – to create one complete system
- Get an instant overview of all reporting
- Maximise productivity by using automation features and removing human error
- Connect the EAM system hand-in-glove with a mobile solution

With the correct implementation, sea ports can ensure that critical machinery such as cranes and straddle carriers are always operating to the highest level, and do not breakdown unexpectedly. The right EAM technology also helps your sea port staff to be more efficient in their daily activities, due to the intuitive user interface and ‘all-in-one’ solution.

In addition, Maximo Application Suite can calculate the cost of labour, materials and equipment to provide an insight into equipment maintenance costs, maintenance cost by work-specific duties and the monthly fuel consumption of every piece of equipment at a sea port.

## Guaranteeing Health and Safety Compliance

Health and safety and regulatory compliance is a major priority for all sea ports. There are lots of hazards at any major sea port, and any risks will have larger implications for the workers/businesses.

By carrying out regular inspections, risk assessments, and ensuring all workers take the necessary precautions, it helps to keep your port safe. But there are plenty more things that sea ports need to consider, including:

- Freight container safety
- Lifting operations
- Dusty cargoes
- Falls from height
- Workplace transportation
- Slips and trips

A full digital audit trail is needed, with clear sign-off on any work order, as well as a Mobile Forms capability to ensure that workers always follow the necessary steps on any work order.

As part of Maximo Application Suite, the 'Health and Predict' feature enables your organisation to get better insight into the performance of your assets – and more accurately predict asset failures in advance. The software also uses machine learning to predict when asset maintenance will be required in the future, and flag this up to the port operator(s).

This functionality all fits within one centralised EAM solution, which means that all the health, safety and asset condition scores and much more are located in the same place.

## Utilising Automation at Sea Ports

Automation has become essential to the successful operation of almost all of the world's largest ports over the past few years. In a recent documentary, Rotterdam was reported to have hundreds of automated machines, and New Zealand's largest port in Auckland uses dozens of automated straddle carriers every second of the day. These machines are monitored by an IT system that tracks where they are, and which other machines they are interacting with.

Furthermore, straddle carriers can be fitted with laser scanners which automatically detect the presence of an obstacle in front of the machine, and stop it before there's a collision.

Although automating a sea port is very expensive, municipalities, governments and operators that do so benefit from:

- Improved berth moves per hour & gross moves per hour
- Increased productivity
- Reduced staff costs
- Less mistakes/human error

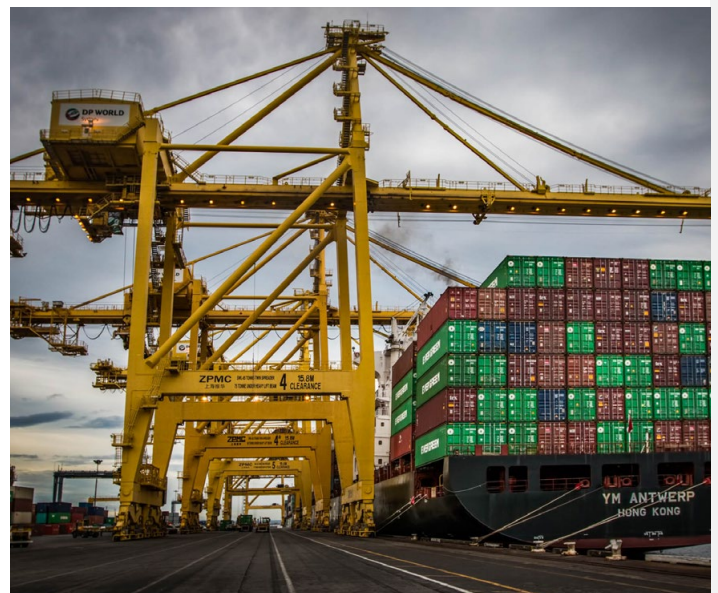
Some of the largest sea ports also use automation to ensure that shipping containers aren't always positioned in the same position on the pavement. This avoids wear and tear in the most-used parts of the port, where dozens of several-tonne containers are being constantly stacked on top of each other.

Integration with Maximo Application Suite also enables sea ports to automate data collection from their asset base, by programming automation scripts into the EAM system.

## Optimising the stacking of shipping containers & maintenance of critical equipment

Maximo Application Suite can be used to optimise the stacking of shipping containers in any sea port. MAS is able to track the quantity, contents and whereabouts of all shipping containers; the date and time they need to be picked up, and for what purpose; where they are going to; and much more.

Furthermore, since the EAM system holds information about when containers need to be picked up, it can calculate the most efficient way to stack them. These instructions are then loaded into the system and carried out by autonomous vehicles, to ensure containers aren't buried too deep in the stacks, thus reducing the number of operations required to access the necessary cargo.



In addition to the above, Maximo Application Suite can keep sea port assets from ageing by implementing maintenance on a regular basis to keep machines in good shape without jeopardising current port operations.

### **Harnessing the capabilities of mobile solutions**

Synchronization and efficiency are paramount at any sea port: everything needs to operate on-time, down to the nearest second and centimetre. Mobile solutions such as Fingertip can be invaluable for this.

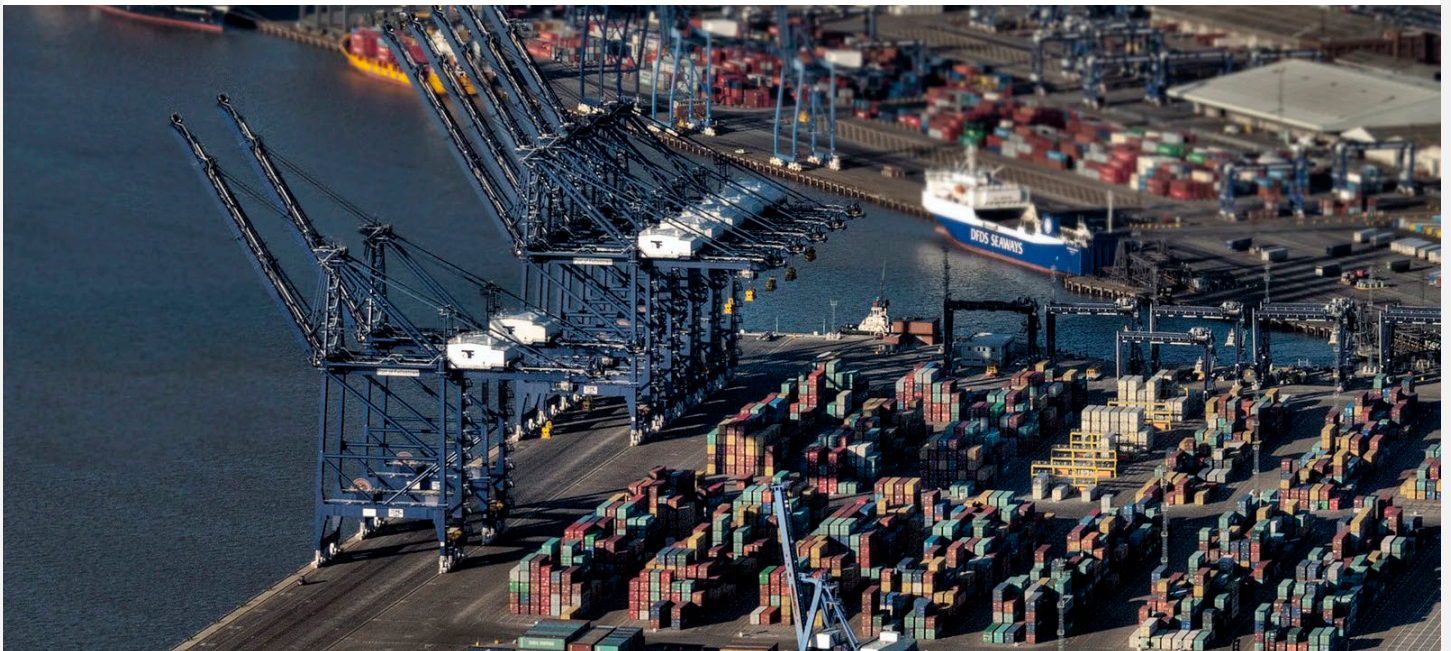
Operators and engineers throughout the sea port can utilise an effective mobile working solution to:

- Ensure they have the right corrective equipment and tools – before they even arrive on the port
- Share information accurately and instantaneously
- Provide access to ‘real time’ information
- Create, assign and process work orders seamlessly

- Manage and maintain port assets efficiently
- Ensure instant access to stock records
- Complete work orders more quickly
- Guarantee health and safety compliance at all times

A real-time link with Maximo Application Suite ensures your data is always current, and that everyone is accessing the same information: even when operating from remote locations and/or without an internet connection.

If you want to implement Maximo Application Suite at your sea port, alongside a mobile working solution, and revolutionise how technology integrates with your operations, get in touch with BPD Zenith today, using the details below. We have lots of experience working with sea ports all around the world.



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**For more information, please get in touch**

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