

# Ship berthing simulator

An algorithm-based solution to optimize vessel calls

**Körber's industry-leading ship berthing simulator is based on a unique algorithm. By automating manual processes, this innovative software enables all stakeholders at ports and terminals to optimize vessel calls.**

## Challenges for ports and terminals

Scheduling vessel calls is a highly complex undertaking with multiple factors to consider, resulting in ports and terminals facing a range of challenges.

**Disparate data sources** – To manage vessel calls, there are many elements to consider, such as vessel draft in tidal ports, safe movement regulations when passing other vessels, ensuring availability of tugs, and having the right pilot available with the relevant navigational experience of that port/terminal. This is currently done using paper-based systems or spreadsheets.

**Waiting times** – Frequent changes to ETAs, largely due to constantly changing conditions at sea, and the first-come-first-served approach to prioritizing at terminals, typically leads to an increase in waiting times, as vessels attempt to arrive early to counter the unpredictability. This knock-on effect can have a major impact on revenue, especially at refineries.



**Pollution** – The longer a vessel is in port, the more pollution is generated. There are cleaner fuel initiatives in place. However, ports and terminals must also seek to minimize waiting times with more efficient scheduling systems. How can ports reduce pollution by minimizing the number of vessels that are needlessly waiting at port?

## Key benefits

### Manage multiple challenges

The solution is driven by our proven algorithm, which manages a range of challenges to ensure safe passage of ships, whilst optimizing the use of your available infrastructure and key resources. This algorithm factors in a broad range of data covering elements such as tide, vessel size, vessel draft, pilots, inventory, traffic and so forth.

### Improve vessel tracking

You'll have accurate information on vessel positioning and ETAs, plus the ability to monitor each stage of the call – from pilot on board to cargo transfer progress and pilot disembarkation. All this will help you to manage the call lifecycle, increase supply chain efficiency and reduce waiting time for the vessels using your terminal.

### Mitigate risk to maximize safety

Users can easily combine a broad range of data such as maritime conditions and infrastructure constraints with vessel tracking to mitigate risk and ensure safer, more productive vessel calls. It's easier to re-schedule calls when ETAs change. Plus, vessel information can be securely accessed by the port community via an interactive planning board.



**“The day-to-day issues a marine terminal faces can be anything from weather to shipping and port authority constraints, volume of traffic and shortage of pilots, etc. All these things must be considered when you’re scheduling shipping.”**

**Julian Brown**

Consultant, Port Plus Operations Consultancy

### **Automating and optimizing scheduling for all stakeholders**

With our industry-leading ship berthing simulator, used by major terminals and ports around the world, you can quickly and easily increase berthing efficiency for all stakeholders and generate a competitive advantage for your terminal.

Our software will help you to reduce waiting times, and any associated demurrage costs, while increasing cargo transfer rates.

Our innovative algorithm, refined over 20 years, will give you access to all your disparate data sources and help you to navigate any constraints. Eliminating the need to manually check information sources, such as tide tables, means schedulers spend up to 80% less time scheduling calls. Ultimately, our software helps users across the entire terminal to better predict the arrival and departure times of vessels.

From an environmental perspective, we advocate the concept of slow steaming, whereby more accurate berthing predictions allow vessels to slow down their engines and burn less fuel. By providing a reliable vessel schedule, terminals can move away from a first-come-first-served approach to improve service levels while minimizing the impact on the environment.

### **The Körber difference**

Our competitors provide manually driven planning boards based on spreadsheet-style Gantt charts. Körber’s scheduling algorithm will enable your schedulers to optimize vessel calls, increase the amount of cargo you transfer, and create an efficient schedule that’s visible to all stakeholders.

## **Körber’s ship berthing simulator improves port performance**



### **Our ship berthing simulator in use**



#### **Port Taranaki**

We recently developed a solution for this major New Zealand port. The delighted client praised Körber for our “commitment, attention to detail and passion throughout the entire project.”



#### **Port Plus Operations Consultancy**

This consultancy represented a client who needed to replace manual paper-based systems with a digital solution that would capture and manage all the terminal’s constraints.



#### **Associated Petroleum Terminals**

Körber delivered a dynamic change management tool that provided this company with an extremely easy-to-use window into the business.



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