Twinn
by Royal HaskoningDHV

Smart Mooring

Make moored vessel operations safer and more efficient

www.twinn.io/SmartMooring

Twinn
by Royal HaskoningDHV

IN SHORT

Our predictive mooring solution

What?

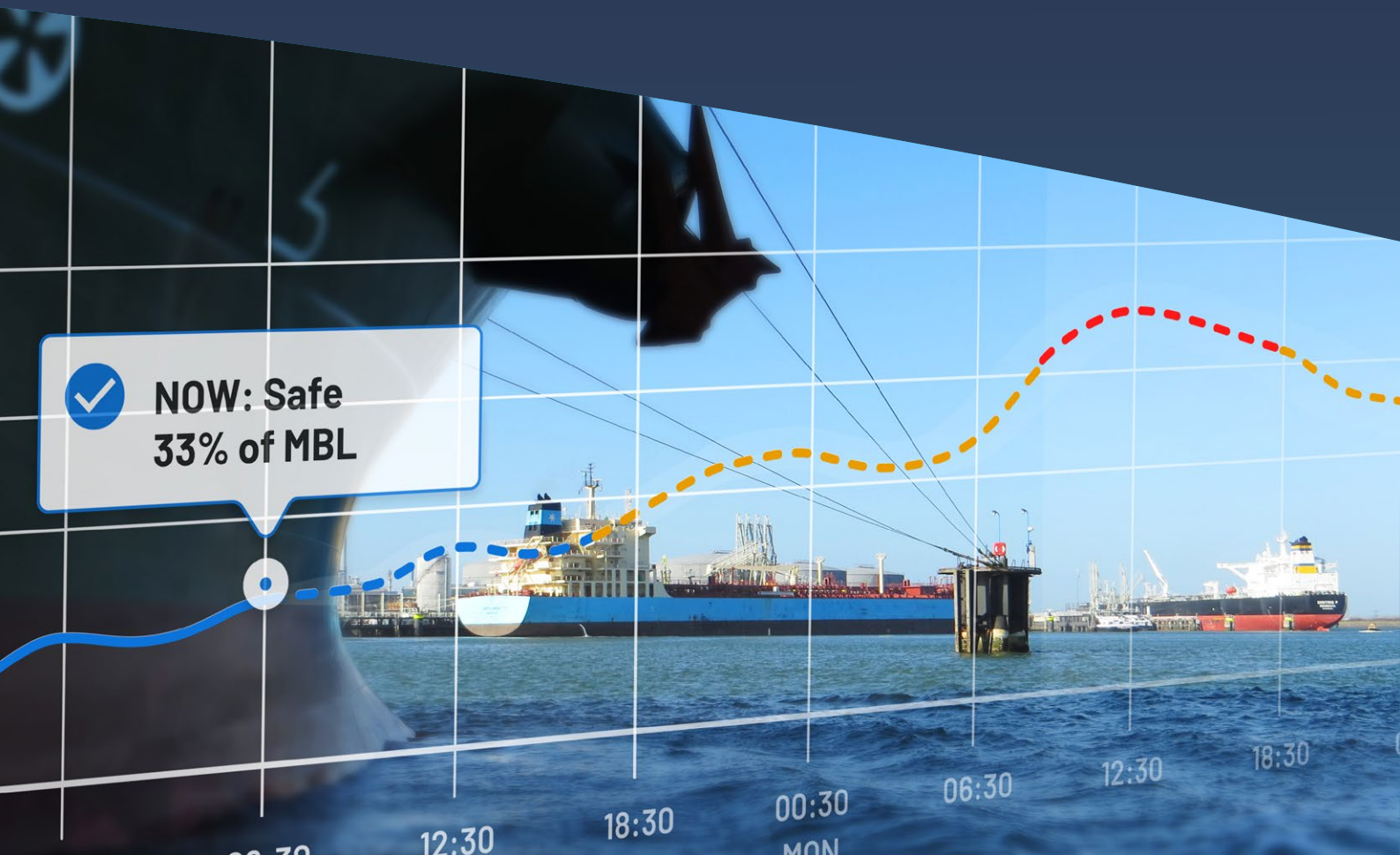
It is a software application that actively warns the Harbour Master or port operator for unsafe situations of moored ships in their port.

How?

It predicts mooring forces and ship motions days in advance by combining hydrodynamic calculations and weather forecast (wind &/waves).

Why?

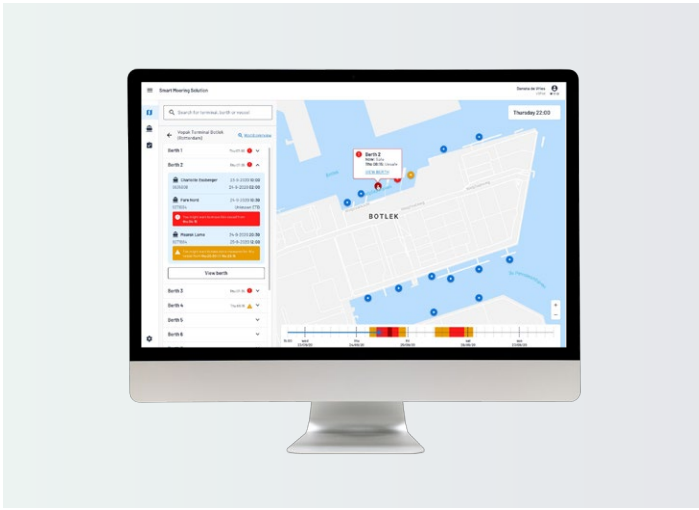
To support operational decisions and so mitigate the risk of vessels breaking breaking loose, which is becoming vital with larger ships, heavier storms and ageing infrastructure.



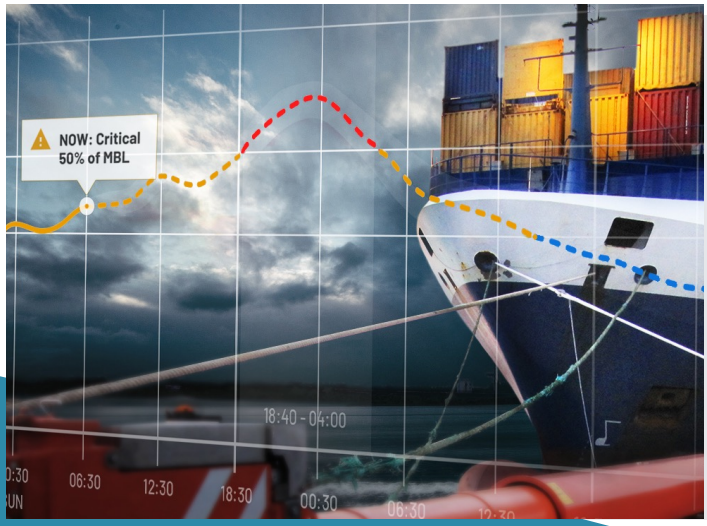
THE SOFTWARE

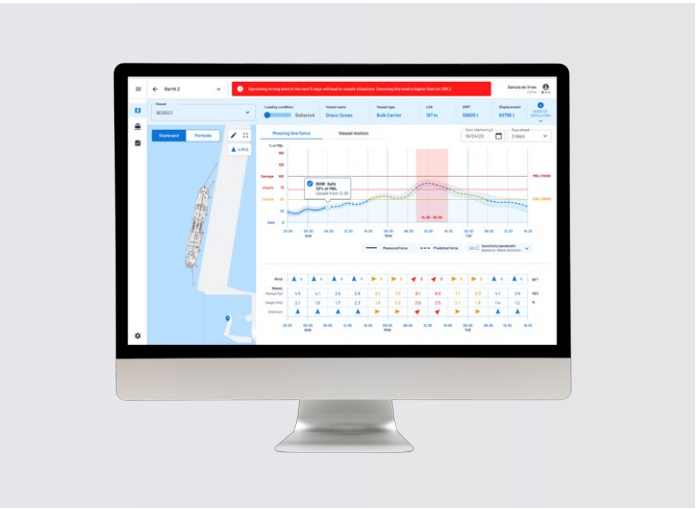
Levels of user information

PORT/TERMINAL LEVEL



BERTH LEVEL

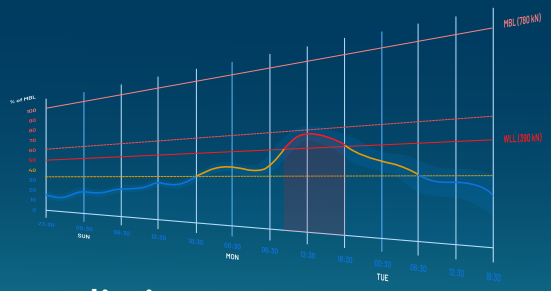




Twinn
by Royal HaskoningDHV

THE SOFTWARE

The modules are adjusted to your needs



Safety prediction

SIMULATION LEVEL
Generic

Actionable insights based on dynamic data for sensitive berths

SIMULATION LEVEL
Specific

Actionable insights based on specific data for the most critical berths

Vessel clearance

Additional module to use when a DMA is not available

Vessel clearance advise based on static data

	Safety prediction – Generic	Safety prediction – Specific	Vessel clearance
Service level	Calculated esspecially for client	Calculated esspecially for client	Basic module
Coverage	Sensitive berths	Sensitive berths	All berths
Type of analysis	DMA (**Dynamic** Mooring Analysis)	DMA (**Dynamic** Mooring Analysis)	**Static** calculations based on (a.o.) - Industry guidelines - RHDHV expert analysis
Metocean data	Wind, omni directional	Wind, waves currents (omni directional, (tidal) water levels	Only off-quay wind
Vessel quay and mooring specifications	- Based on vesselclasses - Based on industry guidelines - Partly configurable	- Specifications customised to the clients needs - Partly configurable	- Based on industry guidelines - Partly configurable

SMART PORTS

What value do we deliver?

Gain control over vessels moored in a port and thereby:

- Improve safety
- Be better prepared for action to mitigate risks
- Increase operational uptime

Become a future-proof Smart Port by:

- Adding science and data to operational and strategic decisions
- Gaining actionable insights in the behavior of moored vessels
- Enhancing communication in the port-call process between the port, vessel and terminal

CASES

Views from our partners

> “Together with Royal HaskoningDHV we have introduced the Smart Mooring software solution in our port. Being able to predict the impact of weather conditions on moored vessels will make vessel operations safer and more efficient. Port of Rotterdam is always exploring new ways to make our port safer, more durable and increase efficiency. Digitalization plays an important role in these efforts. Royal HaskoningDHV has developed the Smart Mooring software and we are proud to state that we are a partner in this digital innovation.”

Port of Rotterdam

Port of Rotterdam

> “The system is proving very useful to us. For example, during a period of poor sea conditions in mid-March, we kept a Capesize vessel alongside, but decided not to berth a Panamax vessel, based on the Smart Mooring output.”

RAK PORTS

Captain Michael Magee
Group Harbour Master at RAK Ports

BECOME A SMART PORT

How to get started?

Get started in 3 steps:

1. Determine user information level per location
2. Discuss with us your key variables of berths and vessels you wish to see in the software
3. We are cloud based, so we will provide you with a login and help you get started!

GET IN CONTACT

Bas van Son
Telephone: +31 (0)88 34 89 441
E-mail: bas.van.son@rhdhv.com
www.twinn.io/SmartMooring