GLOBAL
MARITIME

OPSIM

## EVENT BASED SIMULATIONS FOR PROJECT OPTIMISATION AND COST REDUCTION

GM OPSIM
SUMMARY

GM OPSIM is a strategic planning tool enabling tailored analysis for each project. It provides the ability to model, simulate and test the stages, schedule, resources and limiting criteria of your operations.

The results of the simulation identify the critical stages, availability and delay, resource pinch points and potential savings of time and effort enabling developers to create a credible base case and optimise LCOE.

GM OPSIM is a discrete event simulation package designed to establish disruption, delays and resource utilisation in marine and offshore operations. It facilitates qualification of key assets/vessels, project locations and staging ports/infrastructure. The applications include:

- Uptime
- Vessel selection
- Offshore installation
- Spells analysis and weather windows
- Production and resource availability
- Transportation and storage
- Port assessment and selection
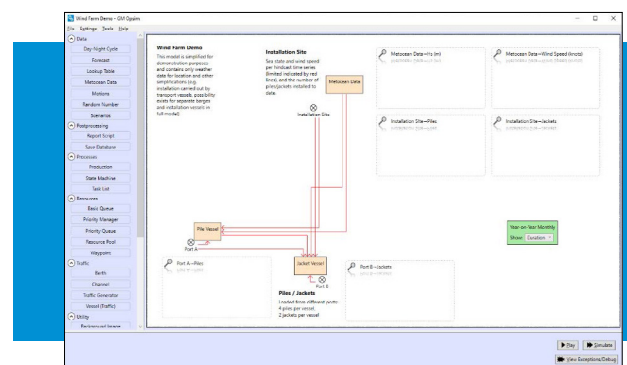
MAIN USER INTERFACE
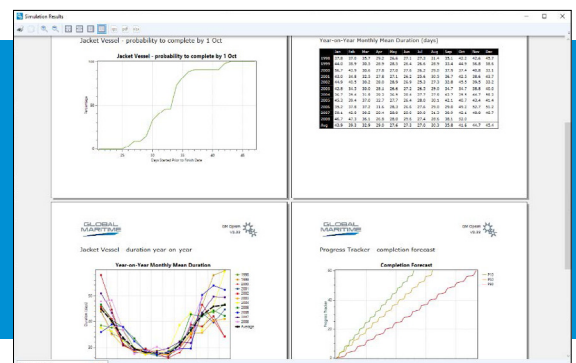
BUILT-IN-POST-PROCESSING

OFFSHORE WIND PROJECT FEATURES AND BENEFITS

- Optimisation of LCOE
- Quantity weather risk and downtime
- Enable development of credible construction and O&M strategy
- Assist in port/infrastructure suitability assessments
- Identify and enable mitigation of key logistics risks
- Crew transfer vessel operability
- Offshore towage and transport
- Facilitate vessel selection and selection of optimum schedule
- Port traffic studies examining risk of vessel encounters

"OPSIM will play a key role during our early-stage evaluation of projects. It will enable us to determine **key and fundamental aspects** that allow onward development"

Pilar Crespo, Head of Offshore Installation at Ocean Winds

GM OPSIM
SIMULATION MODULES

Each model is constructed using analysis modules to develop bespoke solutions. These modules include features such as:

- Incorporating metocean data & related forecasting (including multiple activities with varying limits)
- Limits on metocean data or any other simulation property (items installed, time of day, availability of daylight, etc.)
- Execution of multiple operations in parallel (which may be interdependent)
- Limiting of resources and support for queuing & scheduling
- Calculation of significant or most probable maximum vessel motions
- Support for flow-based logic (processes can repeat or take different actions depending on the state of the model)
- Execution of multiple simulations in order to compare possible cases
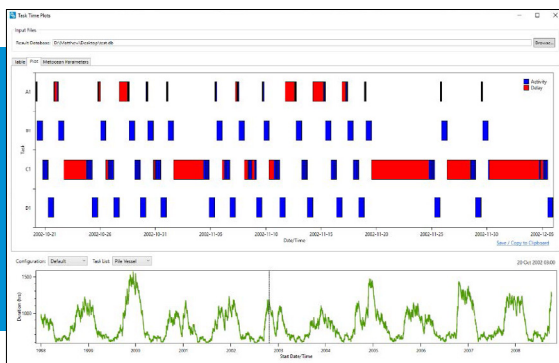
DETAILED VISUALISATION OF TASK STOP/START
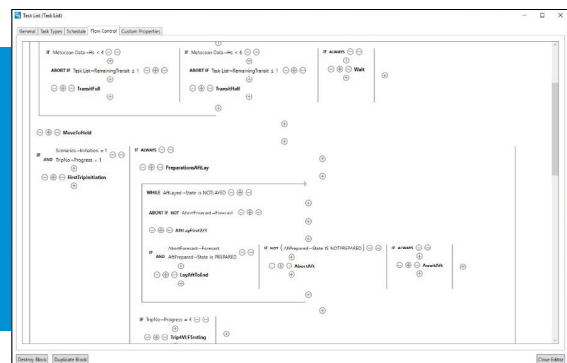
SUPPORT FOR COMPLEX LOGIC

OTHER TECHNICAL FEATURES

- A comprehensive post-processing library allows us to quickly present results in the most suitable format for each situation
- Visualisation of the simulation with moving vessels, graphs of values changing over time, and the ability to fast-forward until certain conditions are met allows us to thoroughly quality-assure the model prior to running the full analysis
- As a further quality measure, detailed results can record the start/stop of every single task in the simulation. Once the simulation has finished we can visually inspect any of the thousands of simulation runs to ensure correct behaviour
- Simulation is multi-threaded, allowing us to obtain results as quickly as possible

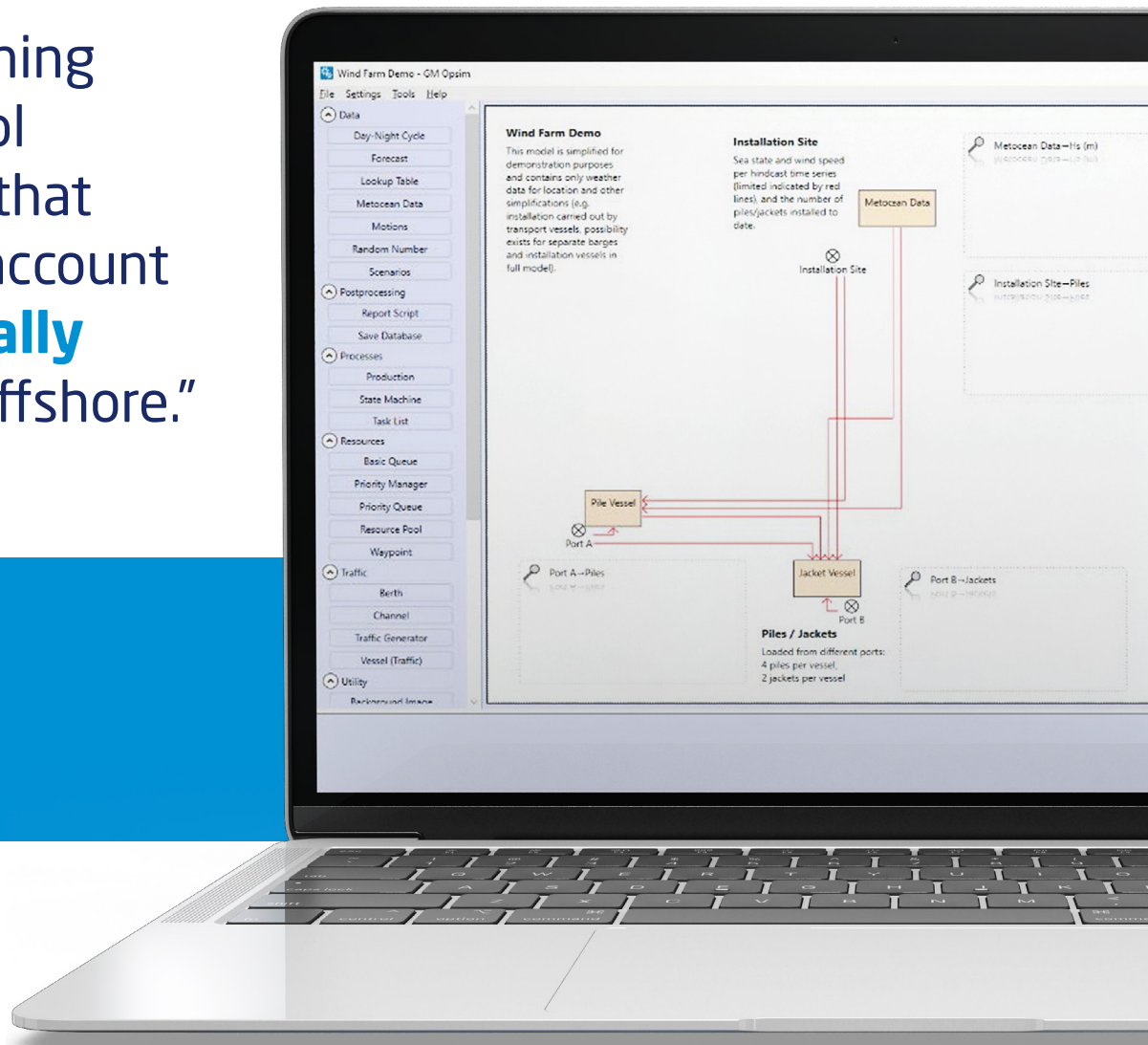"It is refreshing to see a tool developed that takes into account **what actually happens** offshore."

PORT, INFRASTRUCTURE AND TRANSPORT & INSTALLATION SIMULATIONS

Utilising OPSIM and combining specialist engineering and marine operations capability. Global Maritime bring a unique blend of capability relevant to the delivery of port/infrastructure studies. Typical objectives/deliverables include:

- Floater down selection
- Port assessment
- Local supply chain/local content review
- Floater launching methodology

- T&I strategy and sequencing
- Vessel selection
- Weather impact
- CAPEX cost modelling

"OPSIM versatility addresses the lack of flexibility experienced in other tools. It's module-based construction allows for **quick and easy** customisation of the software to include new features and reporting for specific projects, **quickly and easily**".

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