GM OPSIM

Event-based simulations for operational decision support

GLOBAL MARITIME

blue sea thinking

PROGRAM OVERVIEW

GM OPSIM is a strategic operational planning tool for 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.

GM OPSIM is a discrete event simulation package designed to establish disruption, and delays and resource utilization in marine and offshore operations. The applications include spells analysis, weather windows, drilling, production and resource availability and uptime, transportation and storage.

GM OPSIM combines the resources and schedule distribution with criteria, priorities, resource capabilities and environmental limits, and tests them against time envelope and time series metocean data. Our software is able to simulate the operation tens of thousands of times to develop a sound statistical database.
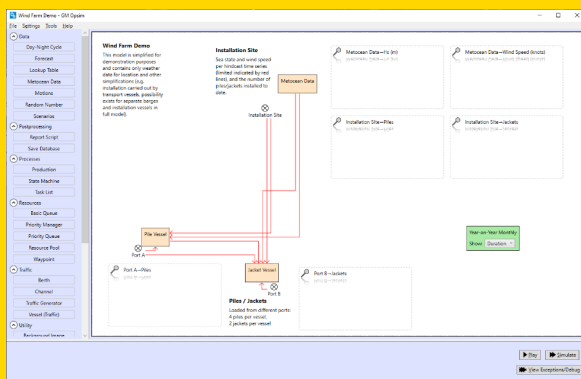
Main User Interface
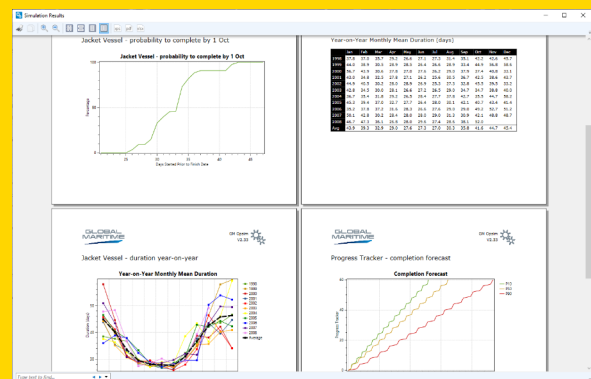
Built-in Post-processing

EXAMPLE APPLICATIONS

GM OPSIM can be applied to many different types of operation:

- Simple weather window and spells analysis
- Wind turbine installation
- Crew transfer vessel operability
- Drilling availability
- Pipelay uptime
- Offshore towage and transport
- FPSO storage and off-take
- Onshore storage and SPM export
- Tanker and export vessel fleet requirements.

SIMULATION MODULES

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

■ Incorporation of metocean data and related forecasting (including of 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
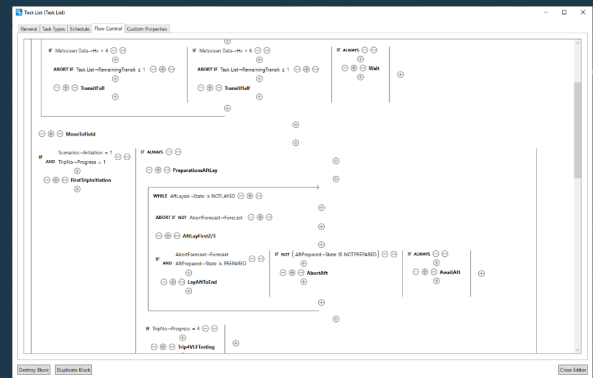
Support for Complex Logic

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, from any of the thousands of simulation runs. Once 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.