

Software

FloatOps



A simulation system for offshore wind construction

FloatOps supports the planning and design of marine logistics operations, facility layout and storage requirements. FloatOps has been adapted for floating offshore wind construction from our very successful port operations platform, PortOps.

FloatOps has been developed as a 'shell' allowing individual activities, such as component arrivals, cargo delivery, component assembly and allocation of resources (pilots, tugs, berths, equipment, labour etc.) to be represented as sub-modules. Together, these modules form a simulation of the construction operation, which also incorporates either historical or forecast weather conditions and their influence on the operation.

Key capabilities

- Stochastic representation of non marine inputs such as equipment manufacture and delivery.
- Representation of the cargo transfer and storage procedures (eg equipment flows within the project area, transfer rates, cycle times, shore-side and wet side storage capacity).
- Stochastic representation of ship arrival/ departure operations incorporating journey times between sites. This enables the entire transport cycle to be simulated and assessed.
- Incorporates time series of weather conditions (wind, waves, currents, visibility) to allow windows of uptime to be accurately represented for each discrete operation. This also permits seasonal or daily variations in construction downtime to be identified.
- Can incorporate economic evaluation routines to enable the entire operation to be assessed based on realistic cost assumptions (eg demurrage, delay).





Benefits

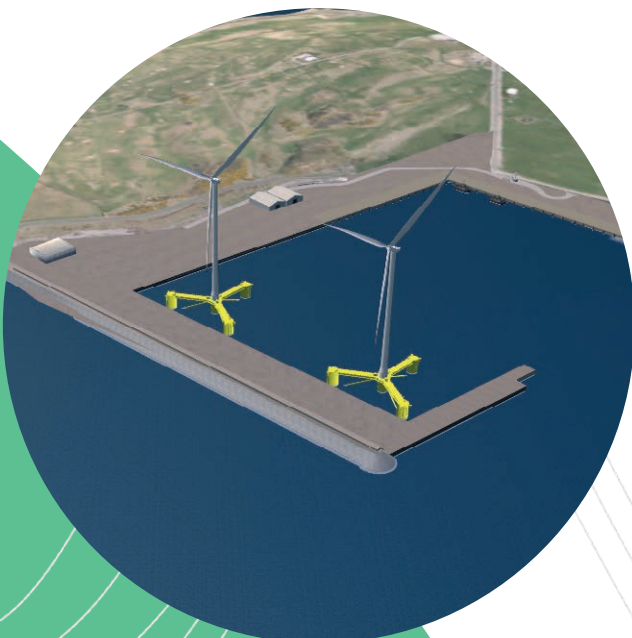
- Assessment of construction phase downtime and delay, including seasonality, and product storage requirements.
- Implications of changes to operational procedures can be quickly examined.
- Assessment of the economic implications of conceptual installation methods in terms of downtime and delay.
- Rapid and reliable screening of conceptual project execution methods.

Typical applications

- Infrastructure capacity assessment (berths, storage locations, access channels etc.).
- Marine services capacity assessment (shipping, pilotage, tugs etc).
- Service harbour operations.
- Transshipment operations (multiple facilities).

Typical output

- Statistical analysis of all possible execution performance parameters over an extended simulation period typically including:
 - berth allocation and berth occupancy
 - delays (average, P90 etc)
 - storage capacity exceedence (number, frequency).
- Import / export capacity of marine facilities and associated infrastructure.
- Recommended capacities for:
 - berths/quay space for assembly
 - in port storage (turbine blades etc.)
 - wet storage (temporary moorings for pre and post turbine assembly)
 - shipping (number and size of vessels for delivery and execution).





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