

# MOPhisTo – Maritime Operation Planning Tool

## Planning and risk assessment for health & safety concepts

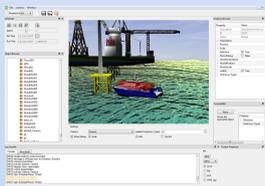
Existing health and safety guidelines are merely generic and often non-formal descriptions of operations that need to be specified for each project and site, e.g. by detailed risk analysis during the project planning phase. The model-based method enables a computer-assisted analysis of the Health & Safety aspects of process modeling and simulation of the planned operation.

### User Benefits

Concerning the development and evaluation of health and safety plans and supporting training the method provides an evidence-based risk analysis and process improvement for offshore operations. Modeled processes and simulated operations are automatically documented and reusable as well as adaptable to project-specific characteristics. Interesting for use in application, the integration of service providers, insurance and during training.



Process steps for model-based planning risk assessment for health & safety concepts



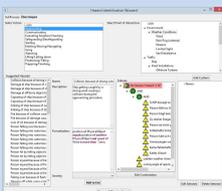
### I) Description of the environment incl. resources

Resources and actors to the relevant operation for offshore wind farms can be selected, parameterized and placed in a scene.



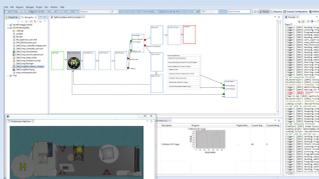
### II) Preparation of the process model for spec. operations

Graphically plan an operation with the working procedures of personnel, the use of resources and the communication can be added and modeled as a process.



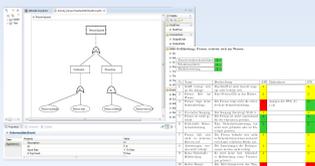
### III) Guided identification of hazards and related causes

At the central elements of a process, so called activities of the actors, potential hazards and possible causes for these are annotated.



### IV) Qualitative validation of the safety concept through simulation

The developed process model can be analyzed by various simulation runs with different parameters and compared to each other.



### V) Quantitative assessment of the identified hazards and causes

Risk assessment by automatic fault tree analysis to quantify the hazards and thereby the planned operation.



### VI) Recommendations for the safety concept

By comparing different simulation runs, the optimal procedure for selected operation is determined and necessary protection measures defined.