

TRAVERSE BOARD  
DIGITAL TWIN  
PLANNING & SCHEDULING





TraverseBoard is a comprehensive Digital Twin platform for accurate predictions and creating optimized robust plans.

## Overview

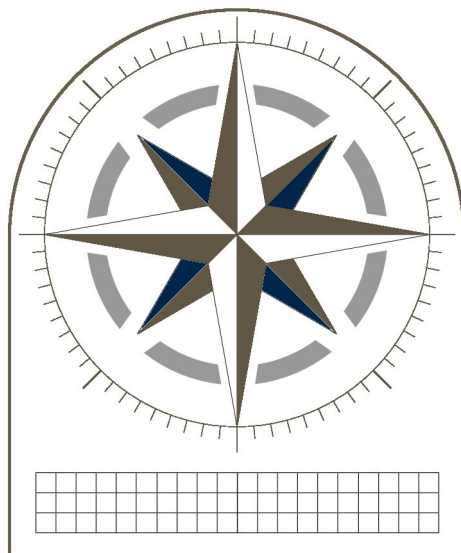
TraverseBoard is a Digital Twin platform that can predict future outcomes in great detail enabling tactical and operational optimization business decisions for a variety of industries.

TraverseBoard combines the power of simulation models strengthened with optimization algorithms brought together by a customizable user-friendly interface and a scenario management tool. The tool is specifically designed for dynamic, uncertain business environments.

You only need an internet browser to run Traverse Board.

### Integrating optimization techniques and simulation

A Traverse Board Digital Twin can be used to create optimized day-to-day schedules and plans based on current system status. TraverseBoard can also be used to analyze investment scenarios. By combining real life data and the unique strengths of both simulation and optimization, fast, reliable, robust and accurate predictions are created.



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## TraverseBoard is a Digital Twin platform for planning & scheduling

The use of optimization brings the 'best' solution for a given key performance indicator, but real life is often too complex or uncertain. Where optimization helps you make better choices if everything in the future is known, a Digital Twin and simulation helps you understand accurate different outcomes and create the most optimal.

Our Digital Twin approach will amplify optimization calculations by:

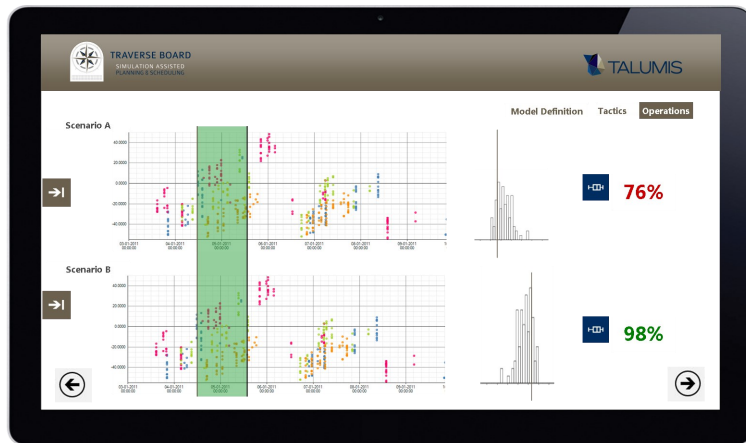
- Incorporating all real life data and constraints, interactions and complexities. The simulation can handle complex details that mathematical optimization cannot cope with
- Evaluate multiple scenarios and even incorporate uncertainties by adding statistical results on possible risks.
- Add high fidelity insight in decisions taken

**Simulation can handle details that mathematical optimization cannot cope with**



## Optimal, robust and detailed plans

Contrary to other solutions TraverseBoard is able to generate proven optimal, robust and detailed plans. The plans and schedules can be compared and fine tuned using the high fidelity simulations before your plan or schedule is deployed in operations.

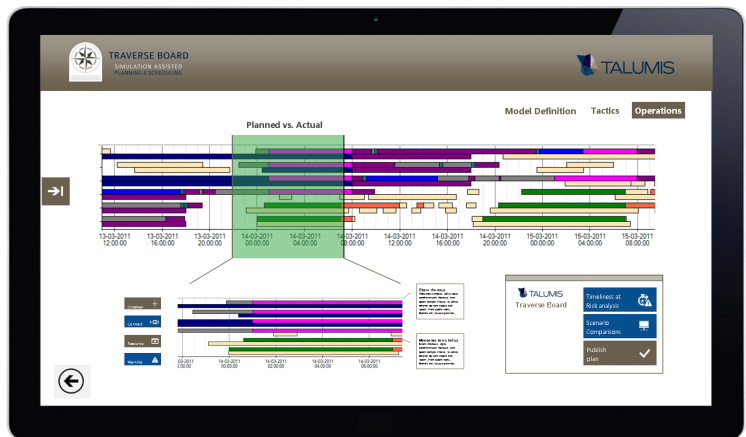


## Simulation results will quantify Value at Risk

**Value at Risk** and **Timeliness** are two important features for determining the best plans and schedules. Plans are evaluated and quantified for uncertainties.

## Compare plans using real life complexity

Different plans are evaluated through simulation experiments, enabling a planner to create the optimal solution.



## Create, evaluate and publish plans

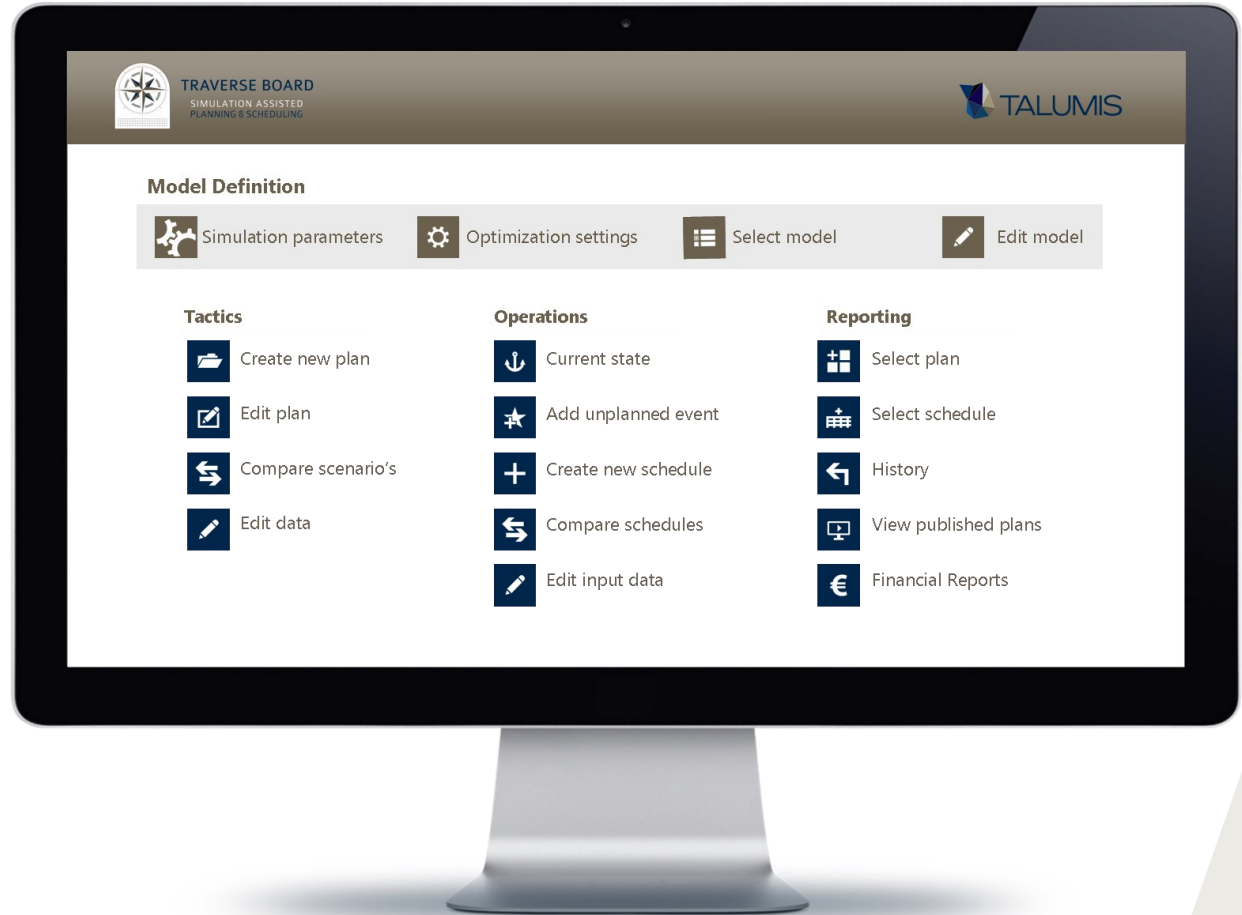
Interactive **Gantt Charts** are used to display plans and activate or deactivate recourses. Planned arrivals, stock profiles and various resources are all planned together and therefore a planning result is always feasible solutions .

TraverseBoard simulates a plan multiple times, using statistics to mimic real-life uncertainties

# Simulation

The simulation engine of TraverseBoard can be used with the scenario management tool to test what-if scenario's in order to evaluate the best plan for now and the near future.

TraverseBoard can create various scenarios that can be compared on multiple key performance indicators. A planner can then make an informed decision on which planning scenario will perform most optimal.



## Digital Twin Planning & Scheduling

The TraverseBoard Digital Twin is linked to on-line systems to have always the latest system status. It is even possible to automatically predict what the system will behave like for the next time period. It can flag possible issues and call for an updated plan or schedule.

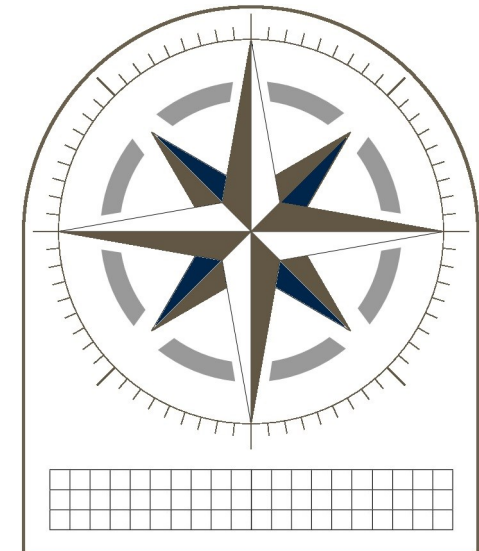
Mathematical optimization and user input are the basis for generating possible schedules based on the actual situation. Users can test various schedule options when faced with unforeseen events or anticipate on certain information. Simulation provides comparisons between schedules to see the impact of changes on the short term and quantify the risk.

Compare plans on its 'value at risk',  
control the 'timeliness of a plan' and  
improve its 'resource utilization'.

## Using Digital Twin simulations to avert risks

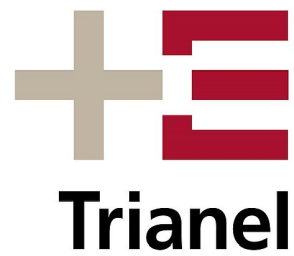
One of the main advantages of simulation is handling uncertainties. Traverse-Board can simulate plans multiple times, using statistics to mimic future uncertainties. In this way it is possible to find out how robust a plan/schedule is and what the risks are. It is possible to compare plans for instance on its **Value at Risk**, the **Timeliness of a Plan** and **Resource Utilization**.

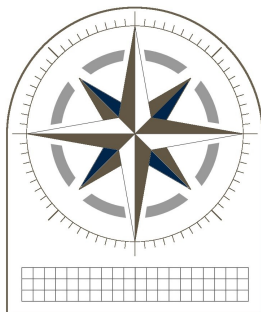
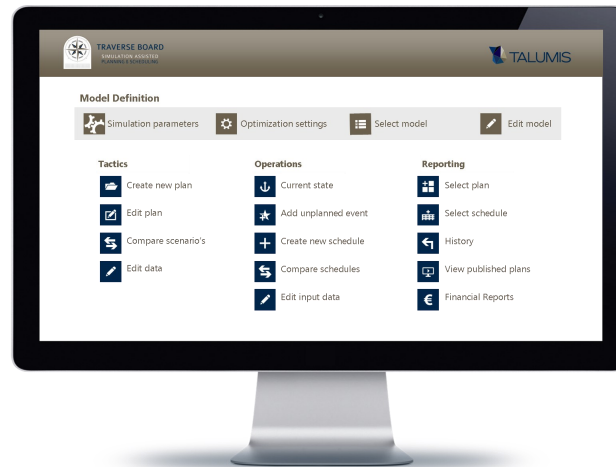
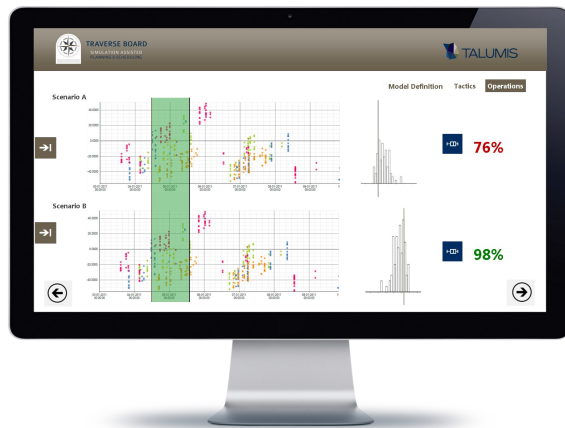
This will allow to optimize for the current schedule, taking into account the system status, long term plans and uncertainties. Schedulers are able to evaluate the impact of different schedules/plans, either generated by the optimization engine or by manually altered plans. Traverse Board will quantify the risk a plan is exposed to.



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Some of our TraverseBoard Digital Twin clients:





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Traverse Board is a Digital Twin software platform to enable accurate tactical and operational optimization business decisions for a variety of industries.

Traverse Board can be used to optimized day-to-day schedules in complex and uncertain business environments. By combining the unique strengths of both simulation and optimization, fast, reliable, robust and accurate results are created.