

MAKING FULLY INFORMED DECISIONS

Building, changing, and expanding ports and terminals require significant investments in infrastructure, equipment, and IT systems. Once completed, any changes to the layout or processes can only be made at substantial costs and time, so it is vital that funds are properly deployed at the outset of a project.

ABOUT | Simulation allows us to capture all dynamic and stochastic effects in terminal and ports operations, enabling us to test alternative terminal setups in a realistic environment – without impacting running terminal operations. This makes simulation a powerful planning and optimization tool. At HPC, we have developed a unique simulation tool "HPCsim" that is continuously being improved and has proven itself in numerous projects for clients around the world.

VALUE | HPC port simulation services provide a comprehensive and reliable method to analyse and optimize operations. We offer tailor-made simulation solutions, ensuring that your investments are optimized to achieve maximum efficiency and minimize costs. Simulation can also prove when investments are not necessary, avoiding wasted expenditure.

OBJECTIVE | Simulation helps our clients make informed decisions and save money by optimizing their operations. By identifying bottlenecks, testing alternative scenarios, predicting future demand, reducing costs, and improving safety, simulation can help operators stay competitive in a dynamic and challenging industry.

PROJECTS DELIVERED #90+

Simulation projects worldwide delivered

CLIENTS

Terminal operators, port operators, rail operators, infrastructure operators

SIMULATION



SCOPE OF SIMULATION SERVICES

INTERMOD.

MARINE

<u>=[|====</u>

Quay Simulation

- Simulation of quay handling operations.
- Validates vessel schedule and determines optimal berth and quay crane requirements.

Marine Terminal Simulation

- Simulation of all container terminal operations, processes and strategies.
- Provides precise insights into future terminal operations.

Marine Traffic Simulation

- Simulation of all vessel movements in ports.
- Enables analysis and optimization of port vessel traffic.

Track Simulation

- Simulation of rail movements and switching operations.
 - Enables testing alternative train schedules, track layouts etc.

Rail Terminal Simulation

- Simulation of all intermodal terminal operations, including equipment, cargo flows, processes, and strategies.
- Provides precise insights into terminal operations.

Hinterland Traffic Simulation

- Simulation of vehicle traffic, modelling road infrastructure, traffic rules, and human behaviour.
- Identifies bottlenecks and quantifies the effects of infrastructure changes.

WE ANSWER YOUR QUESTIONS

DESIGN

- Will the terminal work as planned?
- What is the best layout/equipment?
- What capacity can be realized?
- How much equipment will be needed?
- How many operational hours and emissions will be resulting?
- What are your design questions?

IMPROVEMENT

- What are the effects of process changes?
- How can container stacking be improved?
- What is the best crane scheduling strategy?
- How to improve vehicle allocation and routing?
- How to deal with changing framework conditions?
- What are your improvement questions?

PORT ECOSYSTEM

INDIVIDUAL

TERMINALS

- Which vessel waiting times can be expected?
- What's the vessel traffic capacity of access channels?
- Is sufficient quay capacity available?
- How many tug boats and pilots are needed?
- Is sufficient road and rail capacity available?
- What are your design questions?

- What's the effect of increasing vessel traffic?
- What's the benefit of modified port rules and regulations?
- How can the pilot shift pattern be improved?
- How to minimize congestion in the street network?
- How to reduce emissions in the port?
- What are your improvement questions?