

# PERFECTLY PLANNING THE FUTURE

Port of Tanjung Pelepas simulates future  
terminal processes with CHESSCON

The Port of Tanjung Pelepas (PTP) in Malaysia is one of the largest container terminals in the world, strategically located at the confluence of the major east-west shipping lanes. PTP is the largest transshipment hub in Malaysia, with a terminal facility equipped with state-of-the-art container handling equipment and sophisticated information technology systems that integrate all port users. The terminal offers shippers in Malaysia and abroad extensive connectivity to the global market, providing reliable, efficient, and advanced services to major shipping lines and box operators. PTP has been setting the global benchmark for port integrated services for years and will continue to do so in the future.

“It is a very professional and cooperative partnership with AKQUINET. AKQUINET not only has the know-how in simulations, but also is very familiar on how terminals work and what challenges the processes involve.”

**DANIAL DELANE BIN ABDULLAH**  
Project Integration Division,  
Port of Tanjung Pelepas (PTP)



## Preparing strategic investments with detailed simulations

To remain competitive, terminals must adapt to changing requirements in international maritime transport, which is constantly evolving due to global developments such as the reorganization of shipping alliances, vessel size developments, financial and economic crises, pandemics, wars, etc. Expanding existing terminals or constructing new facilities require significant time and financial investment. Decisions regarding terminal infrastructure and superstructure are made with a long-term focus and cannot be easily changed in the short term. Due to the increasing complexity of modern container terminals, simulation has become a necessary tool for strategic decisions. To solidify its position as the world's most productive terminal, PTP engaged AKQUINET to simulate various scenarios using its CHESSCON software, with a particular focus on handling ultra-large container vessels.



## Simulations from the rough to the fine

AKQUINET utilized the CHESSCON software to profoundly simulate different scenarios for PTP. Firstly, the AKQUINET team replicated the PTP terminal with CHESSCON Capacity and meticulously recorded information such as future timetables, expected vessel sizes, number and size of quay cranes, and length of the quay wall. Using these specifications, AKQUINET confidently simulated the PTP terminal processes for one year, with a strong focus on waterside operations, quay cranes, and container storage capacity. The next stage of the project involved a detailed simulation of the overall operational ecosystem. Here AKQUINET modeled the entire terminal including all aspects of waterside-, yard- and landside operation. The simulation period was significantly shorter here. The aim of the in-depth simulation was to precisely analyze the processes behind the quay cranes.

The simulations provided PTP with a comprehensive understanding of the upcoming processes at the terminal. This enabled them to validate the feasibility of their own terminal plans with regards to the infrastructure and equipment configuration. Early identification of bottlenecks and optimization opportunities were achieved. We greatly enjoyed simulating the terminal together with PTP.

## Why AKQUINET

- In-depth knowledge of the container terminal industry
- Proven track record of terminal simulation
- CHESSCON as a state-of-the-art solution

