



Realtime Business Solutions
Your Success, Our Commitment



TOPX Expert

REVOLUTIONALIZE YOUR TERMINAL
WITH THE ONLY TRUE REAL-TIME
GRAPHICAL CONTAINER PLANNING,
MONITORING AND CONTROL SYSTEM.



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Reduce costs, optimize efficiency, and advance your terminal

TOPX is a true real-time graphical container planning, monitoring, and control system that is now available in the Cloud! Within the TOPS Expert Cloud package, TOPX is the Terminal Operation System. TOPX Advance has continuously been enhanced over the past decade using the most up-to-date computing technologies to develop the most recent TOPX Expert Enterprise and Cloud. It has been designed as a high performance, scalable and reliable graphical solution which has been continuously enhanced, utilizing the most up-to-date computing technologies. The new design incorporates technologies of AI, Automation, Optimization and Big Data to provide the best possible TOS. Similar to TOPO, TOPX uses a high-level graphical display in a well organized, intuitive, modern GUI, allowing users to define and customize colours and styles to their particular liking.

This sophisticated software tracks every movement of a container through a terminal. TOPX automatically manages the storage of containers in the terminal that are on the way to their final position, minimizing the number of re-handling moves while also ensuring the fast and convenient retrieval of containers. It not only supports the maintenance of containers but also facilitates the management of Vessels, Rail, Equipment Control, Yard, and Truck. TOPX brings terminals many advantages in every operational process from the beginning at the time a vessel berths and continuously improves in subsequent processes until completion in the shortest possible time and lowest possible cost.



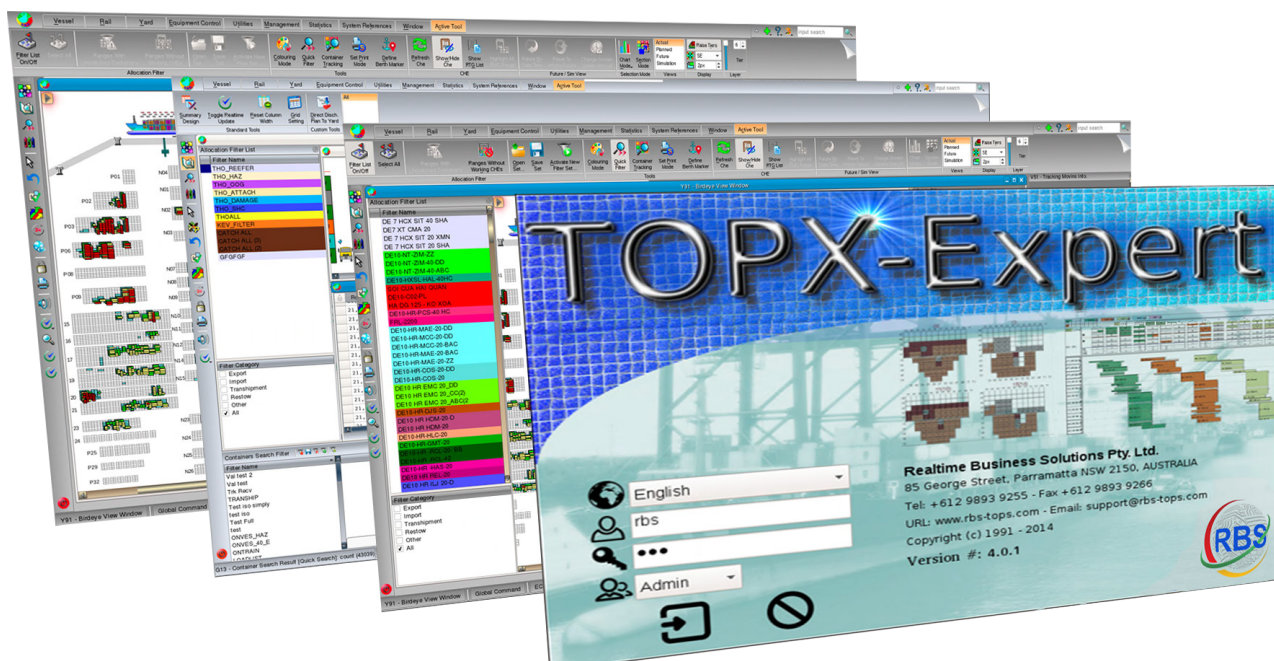
TOPX Expert Features

TOPX Expert supports every aspect of a terminal's operations to ensure smooth and efficient movements of containers.

▼ General Features

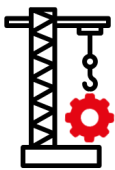
- ▶ Vessel Operational Management
- ▶ Rail Operational Management
- ▶ Truck Operational Management
- ▶ Expert Yard Management
- ▶ Equipment Control (EC)
- ▶ Yard Editor
- ▶ Automated Equipment Control (EC)
- ▶ Expert CHE Strategy
- ▶ Intuitive Graphical User Interface
- ▶ Automated Device Handling
- ▶ Statistics and Reports
- ▶ Equipment Operations and Statistics
- ▶ Security & Administration (feature)
- ▶ Multilingual support (feature)
- ▶ Berth Planning (AI)
- ▶ Vessel/Yard/CFS Billing and Invoicing
- ▶ Real-time Planning & Control
- ▶ Operation and Process Optimization
- ▶ Differential Global Positioning System (DGPS)
- ▶ CHE Automation (ASC, ARMG, ARTG, AVG, STS, etc.)

TOPX Expert Package



TOPX Expert Package

► Optimization



Optimization is a unique architecture of the system that has been implemented to enhance business processes and is fully scalable for virtually any size of a terminal. TOPS Expert has also integrated advanced technologies such as AI and Automation into the software architecture to provide terminals with optimization modules. The modules include berth optimization, CHE strategy optimization, resource, and process optimization. Over many years, RBS has researched and developed software to provide only the best solutions for terminals. We believe that including optimization modules in the TOPS Expert software would provide the most value for terminals of any size. It's time your terminal starts seeing real results.

Optimizing terminal operations provide terminals with a multitude of benefits.

- Forecasting issues
- Improve process efficiency
- Reduce costs
- Increase operational efficiency
- Faster decision-making process
- Greater adaptability
- Accurate Information
- Performance monitoring and accountability

TOPX Expert Package

► CHE Strategy (Optimization)



This new module in TOPX integrates optimization to allow users an overview of CHE management, ensuring that the equipment and yard resources are utilized with optimal efficiency. It shows the relationship between the equipment in Yard, and the Quay Cranes, which assures sufficient CHEs are assigned to maximize efficiency in the deployment of CHEs for a shift. This module also highlights potential bottlenecks or yard congestion for the vessel operations, allowing planners to review and adjust these issues before the operation. The benefits of this module are:

- View ALL operational scenarios by CHE, time and yard situation
- Simulate the operation by time to foresee any congestion and bottlenecks
- Forecasts number of CHEs required for a shift, allowing management to also decide as to how many CHEs need to be assigned
- Forecast the estimated container move times, providing management with a view of staffs' actual performance during the operation and after it is completed
- Assist the planner in updating filters by identifying possible yard bottlenecks
- Assist decision-making by predicting work end times
- Accurate Information
- Performance monitoring and accountability

TOPX Expert Package

▶ Artificial Intelligence (AI)



Our latest development pushes the boundaries of technology as it uses Artificial Intelligence to optimize terminal operations, placing all the power in the hands of terminals. TOPX uses AI for the berth, process, and resource optimization. This powerful technology can improve vessel scheduling, crane details, load data, discharge data, yard data, equipment data, human resource scheduling and much more.

- ▶ Optimizing resource usage - with AI terminal operators will be able to forecast the cost of resources (CHEs/Human resources) at the time of planning
- ▶ Reduce costs - forecasting resources can help reduce costs of using unnecessary resources such as CHE utilization
- ▶ Improve operational efficiency - achieve more accurate ETA/ETD of a vessel, forecast estimated container move times, and other resource use for better management and control of resources
- ▶ Faster decision-making process - management of resources becomes an easier task as resource usage can be forecasted for better control

▶ Berth Planning (AI)



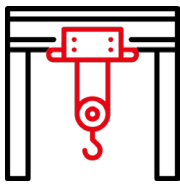
RBS intends to deliver top state-of-art technology to streamline processes for users, which is reinforced in the automated berth planning and scheduling. The automated berth planning in TOPX will provide an optimal berth schedule in accordance to defined settings. It will add value to the planning process as it:

- ▶ Defines upcoming issues (constraints) early
- ▶ Plans vessels by the preferred berth place
- ▶ Avoids vessel waiting times
- ▶ Generate a higher berth utilization



TOPX Expert Package

► Automation



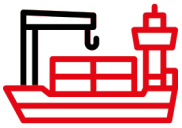
Automation has proved to be necessary for container terminals to achieve more efficient operations and increased productivity. The challenge to be ahead of the market in the wake of the rapid deployment of larger ships, taller cranes and larger call sizes has never been easier. The flexible and widely scalable nature has developed a high reception as it can cater to any level of automation, and be applied to a partially or fully automated terminal.

The automation function has been integrated into a spectrum of operations and processes on a planning level, real-time scheduling level, execution level, and equipment level. This intelligent automation functionality also enables CHes such as ASC, ARMG, ARTG, AVG, STS, etc., to automatically adapt to dynamic situations which optimize performance and output. The automation in the TOPS Expert software allows TOPX to communicate directly with the equipment to perform the container movements without any human intervention. Devices that are also automated using TOPS Expert solution include GOS, OCR, Reefer Monitoring, etc. which aims to cut labour costs as human intervention is heavily reduced. The smart solution also works to provide terminals with gate automation for trucks, trains, and vessels whereby access control, yard interchange and position detection systems are implemented to detect as well as identify all incoming and outgoing traffic. Revolutionize your terminal today with our Automation ready TOPS Expert Solution.



TOPX Expert Package

Vessel Management



With TOPX Expert, every aspect of a Vessel can easily be managed and maintained. Vessel Management includes many features for vessel planning, scheduling, load, discharge, and other vessel operations.

- ▶ Automated and manual vessel working scheduling and planning
- ▶ Crane allocation and vessel crane working scheduling
- ▶ Setting up vessel references, routing, and services
- ▶ Planning, viewing, and printing load and discharge lists
- ▶ Vessel planning functions of creating WQs, planned moves and preplanned information - with the ability to undo planned moves
- ▶ Planning of restow and transshipment containers
- ▶ Re-sequencing of working instructions
- ▶ Planning for miscellaneous parameters - below the deck height limit, above the deck weight limit, over-stow, over dimension, hazardous, reefer, bay and slot stowage rules
- ▶ Printing sequence sheets in lists and stowage plan format, and printing of vessel profiles and other related reports

Vessel Editor



TOPX vessel editor is a component of vessel management that allows users to graphically build vessel profiles, giving the users the flexibility to create new vessels in accordance with their requirements.

TOPX Expert Package

▶ Train/Rail Management



TOPX Expert provides a holistic view of all train functions and related operations, allowing them all to be easily managed.

- ▶ The building of wagon classes and rail wagons
- ▶ Creating train geometry
- ▶ Train list and layout viewing
- ▶ Unloading arriving trains
- ▶ Building and planning a departing train - walking the train, shunting the train, creating WQs and various parameters, viewing planned moves
- ▶ Planning of restow and transhipment containers
- ▶ Re-sequencing of working instructions
- ▶ Planning for miscellaneous parameters - below the deck height limit, above the deck weight limit, over-stow, over dimension, hazardous, reefer, bay and slot stowage rules
- ▶ Printing sequence sheets in lists and stowage plan format, and printing of vessel profiles and other related reports

▶ Truck Management



TOPX truck management focuses on truck in-gate and out-gate movements, allowing users to enter details for a particular truck passing through the terminal on a visit. This provides coverage in viewing truck movements and the number of containers processed for a truck on any cycle through the terminal.

TOPX Expert Package

▶ Equipment Control



Managing equipment is vital to ensuring efficient workflows install within terminal operations. TOPX facilitates terminals with the ability to manage and maintain all their equipment.

- ▶ Work Queues (WQ) and Work Instructions (WI) list
- ▶ EC Centre and User Defined Deployment
- ▶ Activating/deactivating yard equipment
- ▶ Assigning/de-assigning work to yard equipment
- ▶ Exception handling
- ▶ Monitoring and controlling of yard equipment
- ▶ Optimizing operation sequence based on weighing factors
- ▶ Optimizing stacking order and storage based on distance calculations

▶ Yard Management



Without careful and strategic planning, containers can be misplaced or rehandled too much, slowing the productivity in the terminal. Therefore, yard management is crucial to a terminal whereby the TOS implements the yard strategy in TOPX in real-time to increase the efficiency of yard operations and improves overall terminal operational performance. The benefits of the yard management module derive:

- ▶ Monitoring yard set up in real-time
- ▶ Forecast any operation in the yard
- ▶ Fast reaction times to resolve problems before they occur in the operations

TOPX Expert Package

▶ Reports and Statistics



TOPX contains powerful tools for the user to produce many statistical charts and reports. Reports can be created and provided for every main business process. Furthermore, management reports are also provided for monitoring and controlling these processes. These reports also contain statistics on all of the business operations for management to understand the efficiency of the terminal operations.

- ▶ Standard list report
- ▶ Master-detail report
- ▶ Dynamic pivot report
- ▶ Visual chart reports
- ▶ Grouping and sorting by selected fields
- ▶ Exporting in various formats
- ▶ Graphical displaying of report information with the ability to print or email
- ▶ Monitoring of metrics and terminal performance overtime





“Last year, our TOPX uptime reached 99.9% already surpass our standard uptime in our Terminal. And our equipment performance at the STS is 27 moves per hour.”

- ICT Senior Manager of PT Terminal Teluk Lamong

Operating over 30 successful terminals for over 27 years

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