Kalmar SmartQuay, SmartStack and SmartTrucks accommodate growth at SSA Marine's Long Beach terminal.

Increased velocity

SmartPort process automation solutions optimise terminal processes.

Terminal

SSA Marine and its affiliates operate more cargo terminals than any other company in the world, moving over 11 million TEU annually. The SSA Marine terminals on the West Coast of the United States all feature process automation solutions, with the 300-acre Long Beach terminal featuring Kalmar SmartQuay, SmartStack and SmartTrucks in support of its operations.

Challenge

With the volume at the Long Beach terminal expected to increase further, SSA determined the manual data entry process for identifying the containers and capturing their location in the yard became a severely limiting factor. Automatic tracking of container movements as well as capturing and reporting their locations in the yard would allow for the velocity of container moves to be increased.

Solution

Kalmar SmartQuay ensures containers are identified at vessel load or discharge, matching them with the delivering or receiving container handling equipment. Consequently the location of all equipment and containers in the facility are tracked using SmartStack, ensuring an accurate inventory. In- and out-gate operations are automated by tracking street trucks at the gates and yard using SmartTrucks.

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Technology

SmartQuay automatically identifies containers during vessel load or discharge operations using Optical Character Recognition. Both crane telemetry and container ID are transmitted via XML to allow for container-to-tractor association. As the terminal tractor moves the container to its assigned location in the yard, SmartStack tracks its position using RFID, DGPS or LPR technology – whichever is selected as the best solution. The final grounded stack or wheeled position is communicated to the Tidework's Mainsail terminal operating system. This solution allows SSA to reduce the long standing one-for-one relationship between clerk and Top Handler in the yard and instead use labour to handle the small percentage of exceptions. SmartTrucks uses RFID tags linked to a truck ID at the in-gate, to generate an overview of the location of all trucks, contributing to both safety and security.

Added value

Kalmar's SmartQuay solution automates the traditional hatch clerk function at each crane and allows for the real-time generation of parking instructions and work orders to the tractor driver. SSA needs only one apron clerk to handle SmartQuay exceptions during vessel discharge instead of one hatch clerk per crane, a reduction of up to seven clerks per shift.

When the container is moved by a terminal tractor to its assigned location in the yard, SmartStack tracks its ID and sends it to the Terminal Operating System. The real time automated inventory reporting and management ensures you will never waste time searching your containers.

Results

The combined SmartPort process automation solutions improved safety while simultaneously lowering the cost and increasing the velocity and accuracy of operations. They contributed to the position of the SSA Marine Long Beach terminal as one of the most advanced terminals in the United States.

The return on investment on the SmartPort solutions was less than 12 months.

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Kalmar is the industry forerunner in terminal automation and in energy efficient container handling, with one in four container movements around the globe being handled by a Kalmar solution. Kalmar is part of Cargotec.

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