ASI and SICK Optimize and Automate Yard Operations

SICK, Inc.

SICK is one of the world's leading manufacturers of sensors, safety systems, machine vision, encoders and automatic identification products for industrial applications. With more than 1000 patents, SICK continues to lead the industry in new product innovations. The diversity of its product line allows SICK to offer solutions at every phase of production in the logistics, automotive, packaging, electronics, food and beverage, and material handling markets.

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"Surely we need better and more useful technology instead of simply more technology"

Dr. Erwin SICK, founder, SICK Inc

Growth & Impact

Efficiency
Improving yard truck operations

Accuracy
Utilize autonomous yard operations

Cost Savings
Speed up yard truck operations

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ASI Logistics and SICK, Inc. announce another milestone in the development of autonomous yard truck operations.

ASI and SICK have come together to solve a new phase of autonomous yard operations.

Autonomous Solutions, Inc.(ASI) is a world leader in industrial vehicle automation, serving clients across the world in logistics, mining, agriculture, automotive, government, and manufacturing industries.

For an autonomous truck to correctly reverse into a trailer, a few technical details must be known. The autonomous trucks must know the position and height of the trailer that connects to the trucks' fifth wheel and locks the trailer to the truck. The truck must be able to command the kingpin connection, and the truck must be commanded to reverse autonomously into trailers.

SICK has been developing optical products for industrial applications since 1946. SICK's LiDAR uses light detection and ranging to target objects with a laser and measure the time that passes until the reflected light returns to the receiver.

ASI Logistics utilized its robust Vehicle Automation Kit (VAK) and SICK's industry-leading LiDAR to overcome this challenge.

- ASI's Vehicle Control Unit (VCU) commands all the truck's functions when the truck is in autonomous mode.
- ASI utilizes two SICK LiDAR products: the LMS1000 for kingpin position and the TiM551 for kingpin height.
- LiDAR sensors can generate a 2D or 3D image with spatial and depth data for detecting, measuring, localizing, and tracking objects.
- As the truck reverses, the two LiDARs detect where the trailer's kingpin is and relay this information to the truck's VCU.
- The VCU then commands the throttle, brakes, steering, and fifth wheel to continue to reverse safely into the trailer until a secure and safe connection to the kingpin is made.
- This whole process is completed using ASI's Mobius software. Mobius shows real-time vehicle movement, vehicle state, kingpin alerts, and robotic arm control from a user that can be on-site or anywhere in the world.

"SICK is also heavily involved in the creation and updating of global safety standards, which is a critical step to ensuring autonomous vehicles' continued success."

Aaron Rothmeyer, Product Manager, SICK USA