



**Industry: Port**  
**Collision protection at rubber tired gantry cranes (RTGs)**

**Waldkirch/Valencia, Tour Stop No 22 2010 - To prevent collisions, gantry cranes in ports are equipped with outdoor laser measurement technology by SICK.**

**Challenge: Collision Prevention**

MSC Spain was founded in 1982 and has since undergone an impressive global expansion. The company's main focus is container loading and shipping. The issue of safety is a key concern during the logistics process.

At the MSC terminal in the port of Valencia 16 RTGs handle the current throughput of container. In order to better handle the increasing TEUs (container), 12 new RTGs were obtained. These RTGs were equipped with ultrasonic and camera devices to prevent collisions, but this solution was not really satisfactory for MSC. There were repeated accidents, which in part were due to the fact that the crane operator could see only one leg of his RTG, while the other leg is located up to 29 meters away in a different container lane.

The company needed a system that would reliably prevent collisions and increase system availability.

The outdoor laser measurement technology by SICK fit the bill.

**Solution: Laser measurement systems (LMS111) help the crane operator to prevent collisions and increase system availability**

The SICK LMS111 laser measurement system was tested by the port operator and found to meet the necessary requirements. The system is mounted on the lower side of each crane leg, and adjusts both scanning fields to the speed of the crane so that the scan field is small at low speeds, and increases as the vehicle speed increases. The fields cover the entire ex-



panse of the crane legs. In conjunction with the RTG's programmable logic controller, the operator can receive a message indicating whether an object is located in the warning or stopping scan field, thus allowing the operator or the crane system to slow or stop the gantry before a collision ensues.

The LMS111 can adjust its scan fields up 30° so that they scan in the direction of motion even when the crane is turning corners.

**Customer Benefit:**

- Safe, collision-free operation of RTGs, ensuring smooth processing of large numbers of containers
- Cost savings by prevention of collisions and substantially lower repair costs
- Increased systems availability due to decreased crane downtimes

The dynamic adaptation of the scan fields over the entire expanse of the crane legs makes the crane safer to operate at higher speeds, and provides the operator with more time to react to obstacles. The sensors are highly robust and insensitive to all weather conditions and contamination, which reduces maintenance costs and downtime for the RTGs.

MSC was very pleased with this solution, and decided to equip the gantries with the laser measurement system.