Sensors to improve safety in the port

Port logistics monitoring with 3D sensors in Australia

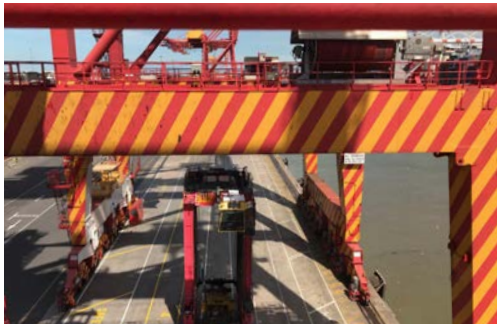
Our customer:
One of the largest port terminal operators in the Port of Melbourne

It is the fourth largest port in the southern hemisphere: every year, 3.2 million containers are loaded at the Port of Melbourne. The operator of the best-performing port terminal in Melbourne has a large stake in these activities.

The Australian Bureau of Infrastructure, Transport and Regional Economics has attested to the high level of efficiency of the terminal: the latter is said to outperform the competition by more than ten berth activities per hour. Accordingly, it is important that handling procedures run efficiently and smoothly. Here, the terminal operator places special importance on the safety of people and goods, which must not be neglected at any time.

The challenge:

To ensure efficient operation of the port terminal and allow the high number of cargo ships to be loaded and unloaded on time, all processes must be planned out in detail. Any breakdown of facilities or accident caused by collisions of transport vehicles results in enormous costs for the port because of the delay in deliveries caused. In view of smooth operations, the crane systems in particular are safety-related: no straddle carrier must be beneath a crane while containers are placed on the ground or goods are picked up. The crane operator, however, has only a very limited view of the system from his cabin, which is why technical systems must be installed to prevent a collision between containers and vehicles. Hence, the company turned to the sensor specialist ifm electronic to avoid cost-intensive and dangerous collisions in the future. Together they found the right solution, in this case O3M151 3D sensors from ifm.

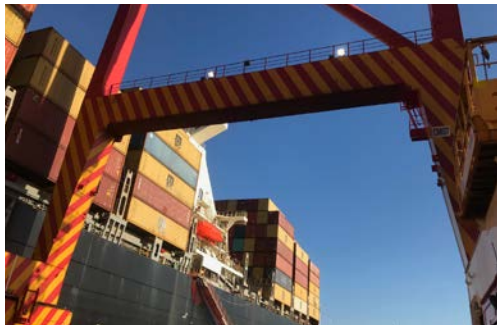


The solution – why ifm?

In order to cover the entire area below the crane, thus being able to guarantee thorough collision protection, it was necessary to install two O3M151 sensors on the system. Due to the sheer height and width of the cranes, a single sensor would not have been able to monitor the entire area. The experts from ifm therefore defined the so-called "Region of Interest" (ROI) and installed the sensors in such a way that the monitored area overlaps slightly. The sensors have a range of 35 metres and are particularly suitable for use in mobile machines. With the aim to obtain a connection to the existing crane controller, a BasicController from ifm was coupled to the system and programmed so that warning and stop signals are output directly via the crane controller. What is more, the O3M151 sensors are optimised for predictive maintenance and use in dirty outdoor environments. The sensors detect whether the camera lenses become soiled and immediately issue a warning so that the lenses can be cleaned in time. By installing O3M151 sensors from ifm, the terminal operator was able to increase the efficiency of their own systems even more, while at the same time improving the safety for people and goods. Furthermore, the system was so convincing in its application that it was nominated for the "Work Safe Awards 2022".

Results:

- Safety for man and machine
- Increase in work efficiency
- Possibility to monitor a large region of interest
- Accident prevention through the use of two sensors



Reliable monitoring of the operating range

Improved occupational safety

Efficiency increase

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