



ESSENSIUM

CHE Safety Assistance System at BASF

EPS™ PDS

Increasing Operator Safety while enabling Greater Handling Capacity

- **Driver Alert System**
- **Dynamic Safety Zones**
- **Increased Operator Safety**
- **Advanced Radio Techniques**
- **Accurate Reliable Positioning**
- **Increased Handling Capacity**

When BASF needed a solution to improve employee safety while increasing operational capacity at their container handling facility in Antwerp, they turned to Essensium for an innovative RTLS-based Position Detection System (PDS).



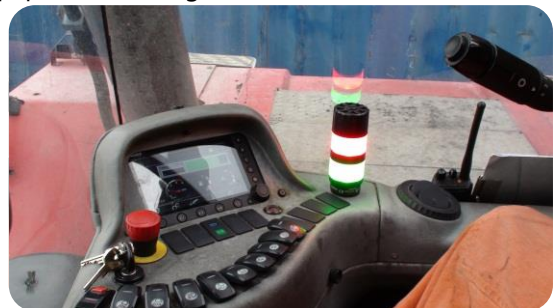
BASF was implementing an expansion project at its dedicated container handling terminal at Antwerp, Belgium. As the company has a policy not to compromise on employee safety, a system for avoiding vehicle collisions was part of the project scope. The civil engineering activities were in progress, the quay area was being extended to increase the number of container barges which could dock, and additional Container Handling Equipment (CHE) in the form of Reach Stackers or Barge Handlers were going to be deployed in order to increase the handling capacity of the facility. BASF also looked for a Safety Assistance System to help reduce the potential for collision between the multiple vehicles which would be operating in the new higher capacity environment.

• *Advanced Capabilities*

After investigating multiple PDS options, BASF selected the Essensium solution due to its unique capabilities. "Various PDS solutions were offered", said Maarten Misschaert of BASF, "but no other provided the reliability and accuracy we required for a system which should be used to help ensure the safe working conditions of our operators."

• *Driver Alert System*

With a reaction time of less than one-quarter second, a red strobe light and audio signal warn the equipment operator when the system detects that the safety distance with adjacent handling equipment is being violated.



"Visibility can be limited when carrying a 40 foot container and maneuvering between container stacks" said Lauris Van Hove, Head of Safety at BASF. "We have evaluated this system together with the drivers, and it is a great reassurance to have this safety assistance feature implemented on site".



- **Higher Quay and Yard Productivity**

The safety assistance system allows handling equipment to operate in a denser configuration, while still maintaining safe working distances between vehicles.



This generates immediate productivity improvements; especially in congestion areas during load/unload activities. "With the extension project and this system in place," said Dirk Vanreusel, Head of BASF Rail & Terminal Services, "we have been able to increase our operational capacity by 30%, without sacrificing our key priority of employee safety."

- **Reduced Downtime**

Safety is productivity. The reduction of collision or near-miss incidents between handling equipment increases the safety of the work environment. And a safe workplace avoids downtime due to incidents and thus increases productivity.



- **Incident Logging**

The system maintains a log of all near-miss and collision incidents, including information such as: vehicles involved; timestamp and location; distance and vehicle speeds; other vehicles in the vicinity.

HOW IT WORKS

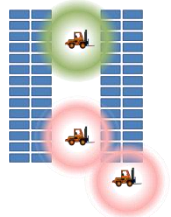
- **Multiple Radio Technologies**



A unique, patented, radio technique gives highly accurate distance measurements even at long range and in the difficult environment of a container terminal. Combined with GPS, a PDS server, and inter-vehicle ranging, this provides multiple levels of redundancy for reliable operation.

- **Dynamic Safety Zones**

Each vehicle in the system is surrounded by its own fully configurable virtual safety zone. Penetration of that zone by another vehicle results in warning signals for the drivers of each vehicle involved.



- **Fully Configurable**

When extended with all options, the system gives the terminal operator full possibilities to configure individual safety zones for each vehicle depending on parameters such as:

- Size, weight and type of vehicle
- Current speed
- Number of vehicles nearby
- Location
- Time of day or night
- Certification or training level of operator assigned to vehicle

For more information
ESSENSIUM NV
<http://www.essensium.com>

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