

Linde Material Handling

Linde

LINDE SAFETY GUARD

The unique monitoring and warning system
that detects hazards before they even arise





During loading and unloading, people and vehicles work closely together. The earlier hazards are detected, the more secure is the process.

SAFETY WHEN IT MATTERS MOST

WHAT IF PEOPLE, THEIR HANDLING EQUIPMENT AND THE INFRASTRUCTURE COULD COMMUNICATE WITH EACH OTHER?

Material handling operations like loading and unloading trucks can encounter potentially hazardous situations. Industrial trucks and personnel working together in close proximity can be challenging and difficult to control. In the worst-case scenarios this can lead to injury or property damages.

Every aspect of any material handling application demands constant vigilance by all personnel involved: blind corners, low visibility areas and distracting noises are all ever-present safety risks in intralogistics and manufacturing working environments.

A timely warning: the Linde Safety Guard

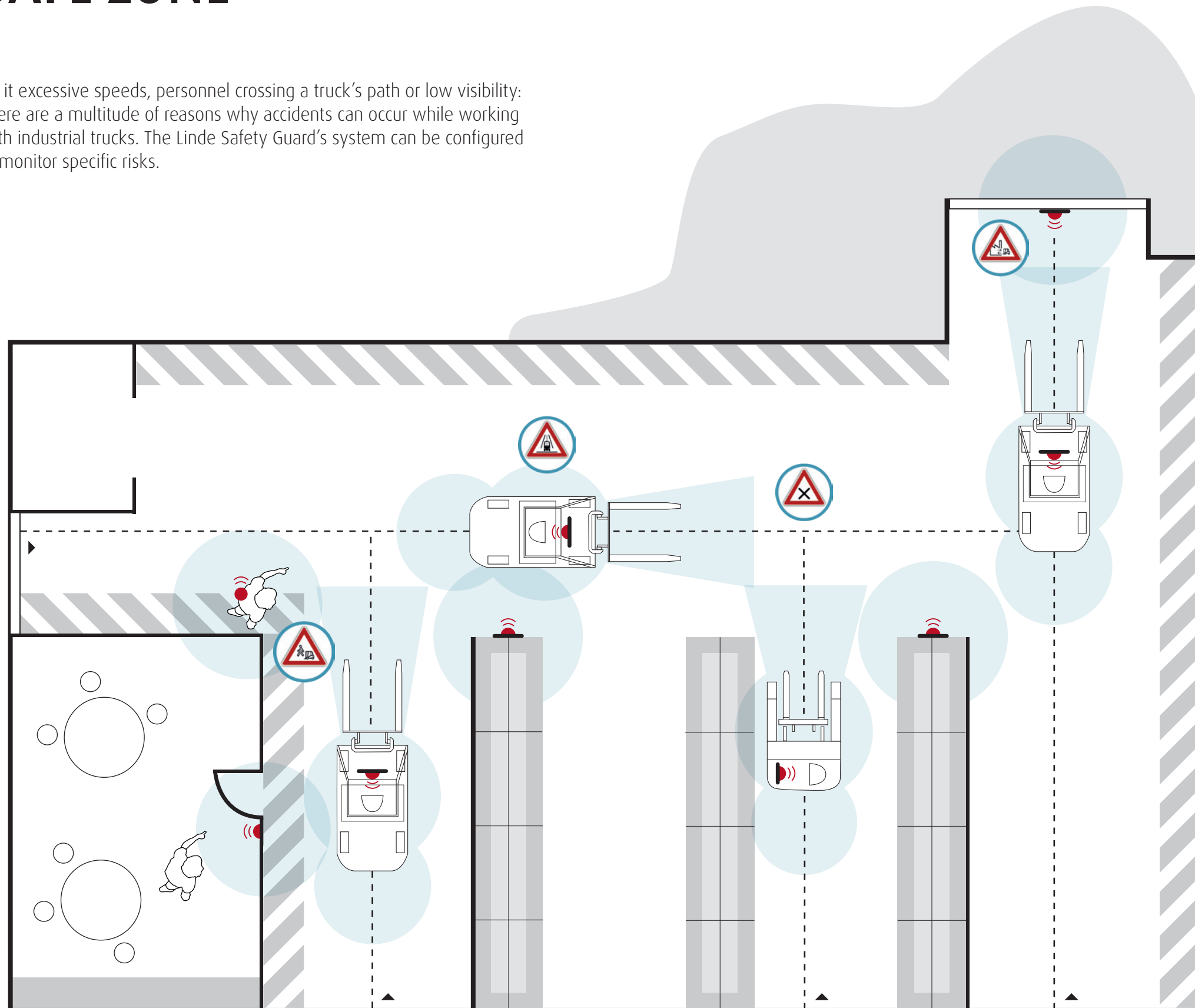
The Linde Safety Guard is an innovative assistance system that enhances safety for truck operators and pedestrian personnel in areas where trucks are in use. Active advance warning mechanisms in the event of potential hazards, means that everyone involved can react immediately. Depending on the application and the selected detection modules, the Safety Guard system warns either by sound emissions, flashing LED lights or vibrations. Hazards can then be neutralised before any physical injury or collateral damage occurs.

This unique safety system was developed by the start-up Comnovo, which was acquired by Linde Material Handling in July 2017. The system has been incorporated into Linde Material Handling's industrial trucks since early 2016. Since then, the system has proven itself across a wide variety of industries.

A complex interplay of man and machine exists wherever industrial trucks are in use. The Linde Safety Guard is an innovative monitoring system that provides an early warning of potential hazards.

ALWAYS IN THE SAFE ZONE

Be it excessive speeds, personnel crossing a truck's path or low visibility: There are a multitude of reasons why accidents can occur while working with industrial trucks. The Linde Safety Guard's system can be configured to monitor specific risks.



HAZARDOUS WORKPLACE ZONES FOR INDUSTRIAL TRUCKS AND PEDESTRIANS

At corners, junctions or hall entrances, industrial trucks can pose a risk to pedestrians. The Linde Safety Guard system provides advance warnings to both the operator and pedestrians. The warning signal can be transmitted through walls and racking and is accurate to within 10 centimetres. Warnings are only triggered when there is a clear danger, thus avoiding false alarms.



COLLISIONS WITH THE INFRASTRUCTURE

Collisions can occur at roller doors or other access points and travel routes with critical heights relative to the height of the mast on the handling equipment. An additional sensor from the Linde Safety Guard system can detect the height of the lift mast, thus triggering a warning if the door, aisle or route height cannot be driven through.* Automatic access door opening is also possible.

* Available in 2019



EXCESSIVE SPEED

Accidents can occur if industrial trucks travel too fast through areas where pedestrian personnel are working or walking. Long, straight stretches can also tempt truck operators to exceed a safe travel speed. The Linde Safety Guard automatically reduces travel speed in these critical areas.



MULTI-TRUCK ACCIDENTS

Collisions between trucks can occur at crossing points where visibility is poor or restricted. In these circumstances the Linde Safety Guard system warns all the truck operators in these zones, of the other trucks' presence in their immediate vicinity. The Truck Unit displays from which direction trucks are approaching. The minimum distance between trucks before a warning is triggered is adjustable.

TAILORED SAFETY

The Linde Safety Guard system increases the safety of all personnel involved in internal traffic. It can see around corners and through walls, reduces speeds automatically and can be programmed to suit any hazardous scenario.

The Linde Safety Guard uses warning zones to prevent accidents. Transmitters are positioned on industrial trucks, walls, racking and even carried by the personnel themselves. This ensures rapid detection, early warning and avoidance of hazardous situations.

If a pedestrian and a truck look likely to collide, then both the industrial truck and the pedestrian are warned simultaneously. A receiver in the truck indicates how many pedestrian personnel are approaching the danger zone and from which direction. Pedestrians are warned by the transmitter they have on their person. This also works through walls and racking.

Speed restriction zones can also be pre-defined and programmed, so that the system automatically reduces the truck’s speed in these zones and also warns the truck operator. This minimises accidents between trucks and personnel in areas such as production, order-picking areas, and busy intersections for example.

All this is only possible because the Linde Safety Guard system is able to precisely determine the position of marked objects or personnel within ten centimetres and the warning zones are individually adjustable. This level of precision also helps to prevent false alarms. Moreover, a broadband radio signal in the 4 GHz range (UWB) helps to ensure reliability by eliminating interference from Wi-Fi, Bluetooth or RFID.

The system can be adapted to meet any security requirements. It consists of individual modules and can be tailored to the respective risk situation on individual sites.

Advantages at a glance

Personnel and zone recognition

Warning zones that can be configured within 10 centimetres of precision

Visualisation of the number and position of personnel in the danger zone

Mutual warning for pedestrian personnel and truck operators

Detection through walls and racking*

Versatile, adaptable and rapid installation

*Valid for typical infrastructure in intralogistics.

Checked during consultancy.



PRODUCT MODULES



Truck Unit

The Truck Unit warns the industrial truck operator via LED lights and acoustic signals.



Portable Unit

The Portable Unit warns personnel of approaching industrial trucks using acoustic signals, LED lights and vibration.



Sensors

Detect the modules carried by pedestrians and industrial trucks in the defined potentially hazardous zones.



Truck Unit small

The Truck Unit small is attached to the forklift and communicates with stationary modules such as the Static Unit or the Zone Marker.



Static Unit

The Static Unit marks hazardous zones in critical areas such as access doors or low visibility intersections. This module warns the environment via acoustic signals and LED lights.



Zone Marker

The Zone Marker defines speed-restriction areas.



Charger

The Charger charges the Portable Unit inductively. The fully automatic activation ensures optimum ease of operation.

Linde Material Handling develop high performance material flow solutions tailored to our customers' needs, enabling users to achieve sustainable competitive advantages. We are one of the largest manufacturers of forklift trucks and warehouse equipment and have been setting standards for more than 50 years in safe industrial truck solutions, fleet management, driver assistance systems and service offerings.

LINDE – for your performance



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