

SAFE WAREHOUSE. SAFE WORKFORCE.





ELOKON: Success in Safety

We provide world-class, field-proven solutions to protect people, objects, and all kinds of material handling equipment in warehousing, distribution and manufacturing operations. We also advise clients on designing health and safety technology into machinery and facilities.

Founded in 1986, ELOKON employs more than 130 professionals in our headquarters near Hamburg, Germany, and offices in Atlanta, Georgia, USA, and Warsaw, Poland. A private, equity-financed company, we are a self-made success in the global logistics industry. We are completely invested in the effectiveness of our solutions and the success of our customers.

We train and motivate our staff to deliver real customer benefits and build long-term business relationships. We think and act with integrity and respect, across borders and cultures. We collaborate transparently with our customers and partners to develop new ideas, products and solutions.

ELOKON's culture is innovative and rigorous, and we value both quality and sustainability. We encourage our teams to think out of the box and systematically review and test new ideas. We love transforming new concepts for products and services into practical, real-world solutions for our customers.

ELOKON's standards are also high. Working closely with customers, we track the cost-benefit of solutions and measure the value we add to our customers' operations. Our objectives are uncompromisingly aligned with our customers' needs.

FACTS AND FIGURES



Increase Productivity in Material Handling

The global supply chain faces constant pressure to improve velocity, accuracy and efficiency, reduce costs, and add to the bottom line. Warehouse accidents are weak links in that chain - they hurt employees, slow the flow of goods, decrease productivity, and increase costs. ELOKON safety solutions are designed to help you avoid breaks in your supply chain and maximize your material handling efficiency.



MORE SAFETY

Our innovative, automated safety solutions help prevent accidents in your warehouses, distribution centers and manufacturing operations - protecting people, objects, vehicles and goods.



MORE EFFICIENCY

More automated safety means greater productivity - workers who worry less about hazards focus more on their tasks, and fewer accidents equals more uptime and throughput.



MORE PROFIT

Our holistic safety concepts enable industrial trucks to operate at optimum speed - increasing the velocity of goods in your supply chain for maximum profitability.

WORLDWIDE.



A STRONG PARTNER NETWORK



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We work with leading technology, sales and implementation partners to make the most of each party's expertise. Collaborating with leading industrial truck manufacturers, systems integrators, and installation specialists, we deliver solutions optimized for each customer around the world.

Safety for Your People & Machinery

ELOKON safety solutions help prevent accidents in warehouses, distribution centers, and manufacturing operations - reducing the risk of injury to your staff and damage to your forklifts, goods and facility. Our systems can be installed on any type of industrial truck – any brand, any age. Our systems can be delivered on new trucks or retrofitted to your existing fleet.

FORKLIFT-PEDESTRIAN SAFETY SYSTEMS FOR VERY NARROW AISLES

We are one of the world's leading providers of safety systems for very narrow aisle (VNA) warehouses. Our safety solution uses intelligent sensors to detect hazardous situations and help prevent accidents. The system meets stringent health and safety requirements for forklifts that operate in VNA warehouses and distribution centers.

FORKLIFT FLEFT MANAGEMENT AND SAFETY SYSTEMS

The automotive industry uses assistance technology to help cars monitor distance, change lanes, apply brakes and park. We have deployed the same kind of technology in our operator-assistance safety systems for warehouse trucks. Our systems can automatically regulate distance between forklifts and objects, adapt truck speed, avoid collisions and prevent injuries and damage.

Award-winning solutions















ELOKON Product Overview

Our ELOprotect™ system for very narrow aisle (VNA) warehouses helps prevent forklift collisions with objects and pedestrians. In countries where strict regulations apply, the solution has been approved by health and safety boards as a pedestrian protection measure on VNA trucks to limit the risk of forkliftpedestrian accidents.



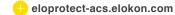
ELOprotect™ is a self-activating safety system with a unique combination of laser and photo-electric technology that protects pedestrian workers and prevents vehiclevehicle and vehicle-object collisions in VNA warehouses. This system enables multiple vehicles to operate in the same aisle at the same time - safely and at optimal speed and efficiency.







ELOprotect Anti Collision System reduces the risk of forklift accidents in narrow aisles. The system's intelligent laser technology prevents truck-to-truck impacts. This enables more than one forklift to operate at the same time in the same aisle - safely and at maximum speed.



2019**WINNER**







We develop and manufacture assistance systems for forklifts and other industrial vehicles. These electronic systems intervene automatically when vehicles engage in unsafe behavior or are in a potentially dangerous situation. For example, our systems can slow down a forklift or warn the driver and nearby pedestrians with visual, acoustic, or vibrating signals. Although our focus is safety - avoiding hazards and preventing accidents - we design our solutions to complement a vehicle's normal work routine with minimal disruption, which typically results in a high level of operator acceptance.



ELOshield

ELOshield is an innovative, UWB-based protection system designed to shield vehicles and staff. A fixed-site version monitors accident-prone areas, such as high-traffic aisle intersections. A mobile version monitors "danger zones" of up to 80+ feet (25) meters) around moving vehicles (both vehicle-to-vehicle and vehicle-to-pedestrian). These zones can be flexibly programmed by vehicle, based on operating needs.



ELOfleet™ is a wireless telematics system that provides RFID based access control, impact recording and data evaluation of vehicle/fleet performance. It can be installed on forklifts of any type, brand, age, or drive system. The system improves operational safety for forklift fleets while enhancing productivity for both vehicles and operators.

elofleet.elokon.com













In production and warehousing facilities, passages between indoor and outdoor work areas are often safety-critical zones. Forklift drivers are typically permitted to accelerate to maximum speed when outside but are supposed to slow down for safety reasons when returning inside. ELOspeed, a radar-based system developed jointly with our automotive industry customers, allows vehicles to operate at full speed outdoors, but automatically slows them down to a programmable speed limit as they come inside.





The Innovative Protective Shield



RADIO-BASED ASSISTANCE SYSTEM FOR PEDESTRIAN WARNING AND COLLISION AVOIDANCE

- + Reliable detection of pedestrians in forklift danger zones
- + Reliable warning before forklift collisions occur
- + Easily configurable protection in areas with restricted visibility
- + Manufacturer-independent and ideal for mixed fleets
- + Compatible with all kinds of industrial vehicles



HAZARDOUS SITUATIONS IN THE WAREHOUSE

AREAS WITH RESTRICTED VISIBILITY

Tight corners, busy intersections and entrance and exit points are particular sources of danger, since this is where pedestrians and vehicles come together. These areas require targeted monitoring to prevent collisions.

HIGH VOLUMES OF TRAFFIC

High-traffic areas pose a serious risk of collisions, especially for vehicles traveling different directions at high speed. Taking additional protective measures increases operational safety.

SPEEDING

The faster a vehicle travels, the greater the risk of an accident. Drivers tend to feel overconfident on routes that they travel every day, so regulating vehicle speed can significantly improve safety.

INFRASTRUCTURE

Forklift collisions with racks, products/merchandise, and other industrical vehicles cost many organizations a fortune. Forklift safety and driver-assistance systems help avoid accidents, especially when vehicles back up or lift loads.



Preventive Accident Protection

FOR PEDESTRIANS, VEHICLES AND AGVS IN THE WAREHOUSE

Productivity is essential in warehouses and distribution centers. But high-velocity material handling puts pressure on safety, so industrial trucks need effective safety processes and safeguards. The risk of accidents is especially high in areas where pedestrians and industrial vehicles work closely together. In these areas, organizations need to take extra precautions to protect their assets and their people.

A distinction is generally made between active and passive personal protection. Whereas passive systems mainly include structural measures such as crash barriers, fences and walls, active electronic assistance systems warn workers in dangerous situations and automatically intervene to prevent accidents.

To achieve maximum safety, it is essential for the assistance systems to be able to perceive both pedestrians and other vehicles. Since production and material handling are becoming increasingly digital and data-intensive, the technology must be tolerant of interference. The systems must also be unaffected by obstructions so that they can detect hazards in areas with limited visibility.

With ELOshield, ELOKON has developed a mobile, radio-based assistance system for warning pedestrians and avoiding collisions, which fulfils all of these requirements.

Industrial truck safety systems to protect pedestrians and increase facility safety.

Passive systems

Passive safety systems include structural measures and visual warning markings which serve to prevent damage in general.

Active systems

Active electronic security systems such as ELOshield proactively detect dangerous situations and intervene automatically.

THE ADVANTAGES OF ELOSHIELD

Different warning signals for each danger zone

Individually adjustable pedestrian modules

Flexible combinations in modular design

Suitable for large areas





Radio-based Warning System

360 DEGREE PROTECTION WITH FLEXIBLE ZONES



ALARM

ELOshield triggers visual, acoustic, and vibration alerts when safety zones are violated.



WARNING ZONE
Speed reduction (e.g. 3.5 mph)



DANGER ZONESpeed reduction (e.g. 1.5 mph)



ELOshield is a mobile, radio-based assistance system. Thanks to its modular structure, it provides comprehensive hazard prevention: from warning pedestrians and avoiding collisions to protecting dangerous areas and controlling speed. This innovative protective shield uses ultra-wideband technology (UWB), which allows signals to be transmitted across barriers, through a building's infrastructure and other objects, ruling out the occurrence of blind spots.

ELOshield allows two different zones to be easily configured: a warning zone and a danger zone. If the zones are breached, the system triggers various events (e.g. an acoustic alarm signal or an automatic speed reduction). ELOshield's vehicle modules, which are installed on industrial trucks, automatic guided vehicles and cobots, regardless of the manufacturer, detect pedestrians at a distance of up to 45 feet and vehicles at a distance of up to 80+ feet.

ELOshield makes a significant contribution to improving safety, but all driver-assistance systems have limits. Once the vehicle is out of the danger zone, the operator can return to full speed. Ultimately, safe vehicle operation is always the responsibility of the driver.

One Solution – Endless Possibilities

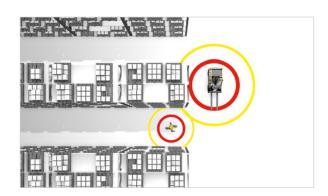
THE INNOVATIVE PROTECTIVE SHIELD IN DETAIL



Pedestrian detection – truck to pedestrians

It is not possible to completely separate pedestrian personnel and vehicles. ELOshield provides radio-based personnel protection to enable pedestrians and machines to work safely in close proximity.

The system helps prevent collisions by issuing a warning signal and slowing down the forklift as soon as a pedestrian enters the hazardous zone.

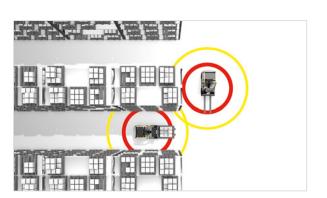


ELOshieldDRIVE

Collision warning – truck to truck

ELOshield provides reliable anti-collision protection between trucks. Vehicles are equipped with an additional detection module, individually programmed to ensure that the truck's detection range is tailored for its local operating zones.

If forklifts are detected in the zones, ELOshield automatically triggers a warning signal or optionally limits the vehicle speed.



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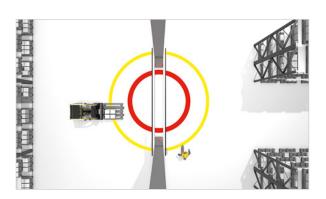
ELOshield Proximity Detection System



Monitoring aisle crossings and vulnerable areas

ELOshield regulates forklift traffic like an invisible traffic light. Fixed-position modules monitor hazardous areas such as aisle intersections and building entrances. If a forklift approaches, ELOshield can trigger a warning signal or – optionally – automatically limit driving speed.

Due to individually adjustable ranges, it is possible for two forklifts to enter an intersection at the same time or to restrict the entrance for certain gates.



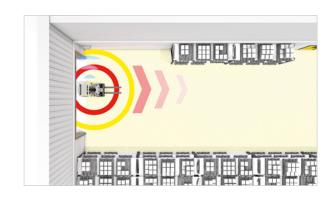
4 ELOshieldSPEED

Automatic speed adjustments in large, high-risk areas

Where the risk in a facility is particularly high, for example because mobile robots, AGVs and people work in close proximity, individual zones can be defined.

Forklifts entering the zone are automatically slowed down to the stipulated speed. Once the forklift leaves the defined area, the forklift can resume full speed.

Special zones, such as picking areas in a warehouse, can be defined as hazardous areas





ELOshield AGV MODULE

The ELOshield AGV Module helps to prevent accidents between automatic guided vehicles and other material handling equipment (forklifts, etc.) fitted with the ELOshield System.

The AGV Module is a UWB hardware device that acts as a standalone ELOshield antenna. The detection range is up to 80+ feet.

ELOshield Special Functions

FLEXIBLY TAILORED TO YOUR NEEDS

In the stationary version, ELOshieldZONE has a number of additional functions that make danger zones even safer, and also ensure that you have maximum productivity at the same time.



Would you like to protect specific walkways for employees and visitors who don't wear ELOshield pedestrian modules?

This isn't a problem with ELOshield CROSSWALK. Its stationary unit has a motion detector and an antenna which receives signals from approaching forklifts. Pedestrians are informed about the hazardous situation by a traffic light. The vehicle speed can also be reduced in these areas depending on the situation. Examples of application areas are aisles in production or transit areas between different departments.



Would you like to ensure that only authorized vehicles can access sensitive areas?

You can equip your gateways with ELOshield ACCESS. This module is used for reliable access control, and will only open the gates when an authorized vehicle approaches. This is useful in areas in which pedestrians are present and only a certain group of vehicles is allowed to enter. You can significantly increase productivity in your warehouse with automatic control.

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World's Most App-centric Forklift Fleet Management System

GET MORE WITH FLOFI FET

More material handling safety

The ELOfleet app provides forklift access control – using the built-in RFID reader of the Android smartphone – to make sure only trained, authorized drivers can use lift trucks. The app also creates and delivers electronic safety inspection checklists, and enables real-time reporting of forklift impacts.

More fleet productivity

It's easier to collect forklift data when you use the built-in cellular/WiFi of Android devices. And our cloud-based software's intuitive dashboards and drill-down reporting make it easier to analyze data, too. You can compare individual trucks, work groups, and entire sites across your organization. A deeper understanding of your most – and least – productive assets will let you focus on improving efficiency where you need it most.

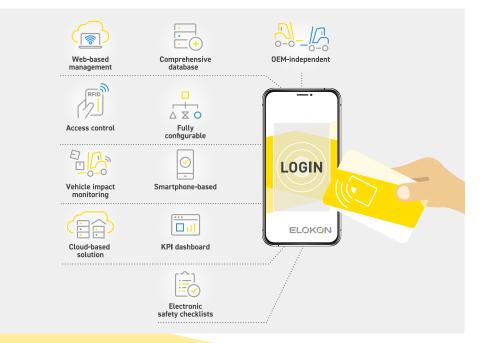
More workplace security

Smartphone-based access control not only prevents unauthorized people from using your equipment, it also ensures safety due to trained forklift operators.









Lots of Choices for Forklift Data & Communication

Lots of technical possibilities

ELOfleet is the world's most app-centric forklift fleet management system. It works with Android smartphones or tablets and you can access the system software through the cloud.

Lots of information - always at hand

Wherever you are, you can access all of ELOfleet's web-based data at any time – via smartphone, tablet, notebook, or desktop PC. Fleet and operator utilization data can also be exported through open system interfaces. And the data is standardized across all types of equipment – so no matter what brands or models you have, our OEM-independent system makes it easy to compare and evaluate data.



Forklift Access Control

Authorized personnel only

ELOfleet ensures that ONLY authorized personnel are allowed to operate forklifts. To use a forklift, operators have to log their RFID badge into the smartphone.

Three levels of authorization

Operator	Maintenance Personnel	Supervisors
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ELOfleet's cloud transmits access control authorizations to the fleet wirelessly. For users with privacy concerns, the system can also be used in anonymous-driver mode.

Temporary Lockout

If a forklift has to be taken out of service for scheduled maintenance, a safety check, or any other reason, you can lock it out wirelessly, through ELOfleet's cloud software and smartphone app. You can also temporarily block individual driving privileges – to manage lost company ID cards or expiration of a driver's license/training certification.

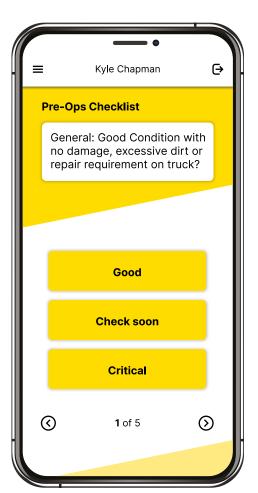


Checklists for Safety Compliance

Before driving

Before an authorized operator can use a lift truck, safety regulations require the completion of a safety inspection checklist.

ELOfleet makes it easy to set up and deliver these electronic checklists through the smartphone app. Operators answer a series of multiple-choice questions to confirm the truck is safe to operate. If problems are reported, the system can notify maintenance - in real time - and, if necessary, lock out the vehicle.



Customizable questions



Safety up front

Verify the safe operating condition of equipment

Improve material handling safety best-practices

Customizable questions and multiple-choice answers

Easy, automated management through smartphone app

KPI Dashboard

Clear overview of data

ELOfleet's data dashboard is configurable for each individual user and provides an instant, clear overview of all fleet data. Daily, weekly, and monthly summaries are available, with drill-down to every detail.

Wherever you need it

Data analysis is easy across multiple sites. Ten standard reports let you optimize fleet size, identify areas and people that need closer management, and improve your material handling productivity.

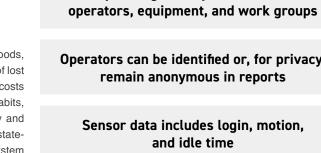
Sample dashboard

- all the data you need at a glance.

KPI Data and Impact Management

Better safe than sorry

Forklift impacts can cause costly damage to a facility and goods, as well as the forklifts themselves. Not to mention the cost of lost productivity. And if a forklift accident causes an injury, the costs can be exponentially higher. To promote safer driving habits, manage incidents more effectively, and cut the frequency and cost of forklift accidents, ELOfleet records impacts with a stateof-the-art sensor and categorizes them by severity. The system can react automatically in a variety of configurable ways, based on the severity of the impact. For instance, the system can slow the vehicle down to creep speed, lock out the vehicle, and/or require a safety inspection.



Sensor data includes login, motion,

Automatic detection, alerting, and reporting for three impact severity levels



KEY DATA POINTS

Operators can be identified or, for privacy,

remain anonymous in reports

Operating activity of individual

and idle time

KPI = Key Performance Indicators



Optimum Quality & Performance

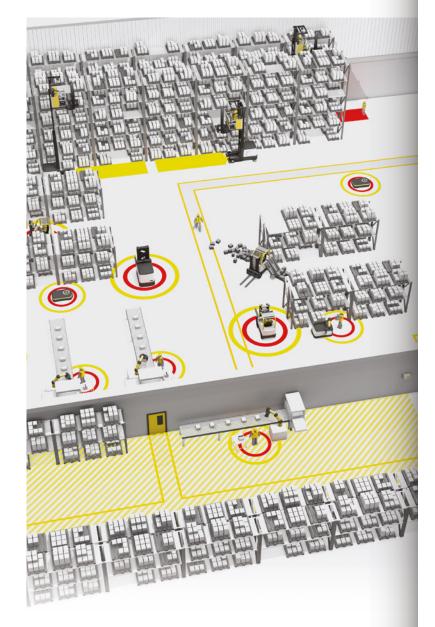
Highest standards

Built with a state-of-the-art smartphone app and cloud-based software, ELOfleet lets you manage your forklift fleet more easily and cost-effectively than traditional hardware-centric systems. All system components are produced to the highest quality standards and comply with all applicable international regulations and directives. System installation and commissioning are performed reliably by in-house service engineers or certified partner technicians.

Maximum safety

You can rely on ELOfleet to hold forklift operators accountable for their driving, enforce safety best-practices, and improve material handling productivity.

- Quality-engineered in Germany
- Manufactured with ISO 9001 certification
- Complies with all applicable regulations, including OSHA and FCC
- Uses standard interfaces / technologies, including wireless security encryption
- Reliable implementations by in-house service engineers or certified partner technicians



Our End-to-End Offering

With some 40 years of industry experience, deep expertise in safety technology and success implementing and supporting our systems, we know how to help our customers achieve their safety goals. We provide comprehensive end-to-end services, from pre-sales requirements analysis to project management to after-sales support.

PRF-SALES CONSULTING

As part of our pre-sales consulting service, we typically assess the current application, define goals, analyze requirements, and work closely with the customer to tailor the right solution and project plan.

PROJECT MANAGEMENT

Managing the deployment of our systems typically includes integration with vehicles, installation and calibration of hardware, and commissioning/launch.

AFTER-SALES SERVICE

We provide a wide range of ongoing support options for our customers: phone and email service with short response times, fault rectification under warranty, maintenance contracts, recurring compliance testing in accord with health and safety regulations, periodic refresher training, and on-site assistance from service technicians.

TRAINING

We can provide extensive training, from individual sessions on how to use our products to "Train the Trainer" events. The simplicity, reliability and automation of our systems empowers our customers to conduct their own internal training. Customers also often install and commission our products themselves.

PRODUCT INNOVATIONS

We welcome new product ideas from our customers—to improve industrial truck safety, driving comfort, ergonomics, economy and/or efficiency. With over 38 years of experience developing successful electronic solutions for warehousing and manufacturing applications, we are well positioned to systematically evaluate new product ideas — whether for an entire industry or an individual customer—and transform them into timely commercial production.

We love innovative, agile product development!

»THE ELOKON BRAND IS SYNONYMOUS WITH LEADING EXPERTISE IN SAFETY SYSTEMS FOR PLANT AND MACHINERY. ELOKON ALIGNED THEIR SAFETY TECHNOLOGY WITH OUR OPERATIONS AND IMPLEMENTED OUR PROJECT PERFECTLY.«

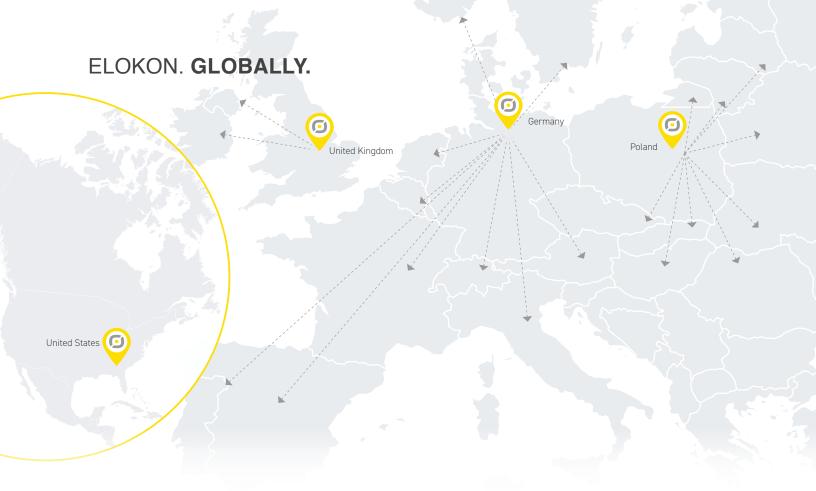
Daniel Salas, Key Account Manager Industrial Vehicles, SICK Vertriebs-GmbH

THE ELOKON PARTNER PROGRAM

Lift truck OEMs Lift truck dealers

Systems integrators

Technology providers



4,250+ CUSTOMERS. GLOBALLY.

With industrial experience and technical expertise from more than 4,250 projects in more than 46 countries, we optimize the intralogistics of our customers.



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