

# Collision Avoidance Solutions

Brochure 2023 - 2024



ALIS Tech Ltd.  
[www.alis-tech.com](http://www.alis-tech.com)





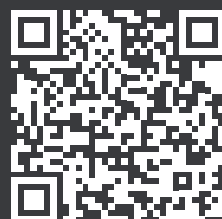



## CONTENTS

<b>Forklift Avoidance Solution</b> Advantages, Compatible Ad-on Devices	<b>04</b>
<b>Indoor &amp; Outdoor Zone Deceleration</b> Forklift Speed Control	<b>08</b>
<b>Crane Collision Avoidance</b> Suspended Load Safety	<b>12</b>
<b>Pedestrian Avoidance Solution</b> AI-Powered Cameras With UWB	<b>14</b>
<b>Smart Safety Barrier</b> Excessively Raised Loads	<b>18</b>

**Innovative  
Safety  
Solutions 4.0**

**We Are First Class In Safety.  
Be Part Of It.**



 case of study



Established In 2018

# ALIS Tech Message

ALIS system is a tailored-made solution that improves safety and increases the efficiency of operations. ALIS solutions are based on the latest wireless technologies defining the direction of Industry 4.0.

2018

## ALIS Tech s.r.o.

Main focus on LED floor marking division. Development of collision avoidance solutions.

2020

## ALIS Alliance Establishment

First successful projects for LED floor markings and anti-collision systems in 11 European countries.

2022

## +600 Projects & +200 Customers

More than 600 projects for LED floor markings and anti-collision systems were implemented in 20 countries.

70 %

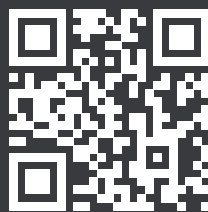
70 % of forklift-related accidents can be prevented


135 mil \$

forklift accidents cost \$135 million per year

34,900

34,900 serious injuries occur annually



 UWB tag model



## Forklift Autonomous Safety

# Comprehensive Collision Avoidance Solution

Direct communication (peer-to-peer) between the tags installed on handling equipment and the tags for pedestrians ensures the protection of forklifts and employees from accidents caused by lack of visibility and inattention in blind spots of operations area. Wireless communication triggers predefined actions:

- ✓ Autonomous speed reduction in predefined zones (warning & danger).
- ✓ The LED safety floor marking guidelines for MHE and pedestrians at the workplace.
- ✓ The opto-acoustic signalisation of danger inside the forklift cabine.
- ✓ Timely warning of the pedestrian about the danger of an approaching forklift via vibrating wrist band/card.

<b>IP cover</b>	<b>IP 65</b>
<b>Technology</b>	<b>UWB / Wi-Fi / BLE / RFID / combination</b>
<b>Type of communication</b>	<b>peer-to-peer</b>
<b>Zones</b>	<b>safe / warning / danger</b>
<b>Inside cabine signalisation</b>	<b>optic / acoustic / opto-acoustic</b>









## Advantages Of ALIS Collision Avoidance Solution

- ✓ 2-phase deceleration (warning/danger zones).
- ✓ Indoor/outdoor speed control.
- ✓ Comprehensive with AI-powered cameras.
- ✓ Immune button for temporary (10 sec) deactivation of speed deceleration function.
- ✓ Easy Mobile & Web App for easy change of parameters settings (vehicle performance/zone width/logic of smart LED floor marking).



## Compatible Add-on Devices

- ✓ Diagnostic unit for battery check of personal tags.
- ✓ 3D cover of the forklift unit.
- ✓ Inside cabin optoacoustic beacon with the ability to adjust the volume.
- ✓ Extension of AI-powered cameras for pedestrian detection.









Indoor / Outdoor Zoning

## Indoor & Outdoor Zone Deceleration

- ✓ Wireless detection of a MHE direction of travel when entering the zone.
- ✓ Autonomous speed reduction to the minimum speed limit.

## Speed Control Inside The Factory & Warehouse

Autonomous speed control of the MHE when entering the hall/area with a higher risk of forklift-related accidents.

IP cover	IP 65
Technology	Ultra Wide Band (UWB)
Type of communication	peer-to-peer
Zones	zone of activation / zone of deceleration

**80 %**

up to 80 % of all injuries at work are due to the human error

**20 %**

20 % of all work injuries are pedestrian vs forklift type

**18m**

in average the Return on Investment is 18 months





**Easy & Fast  
Change Of  
Forklift Performance.**







powered by ALIS Tech Ltd.

- Speed zones settings
- LED Floor Marking settings
- Indoor / Outdoor settings
- Diagnostic tool

© 2023 by ALIS Tech Ltd.

### PAS (Pedestrian anti-collision system)

Driver 30 cm

Warning zone 330 cm

Danger zone 200 cm

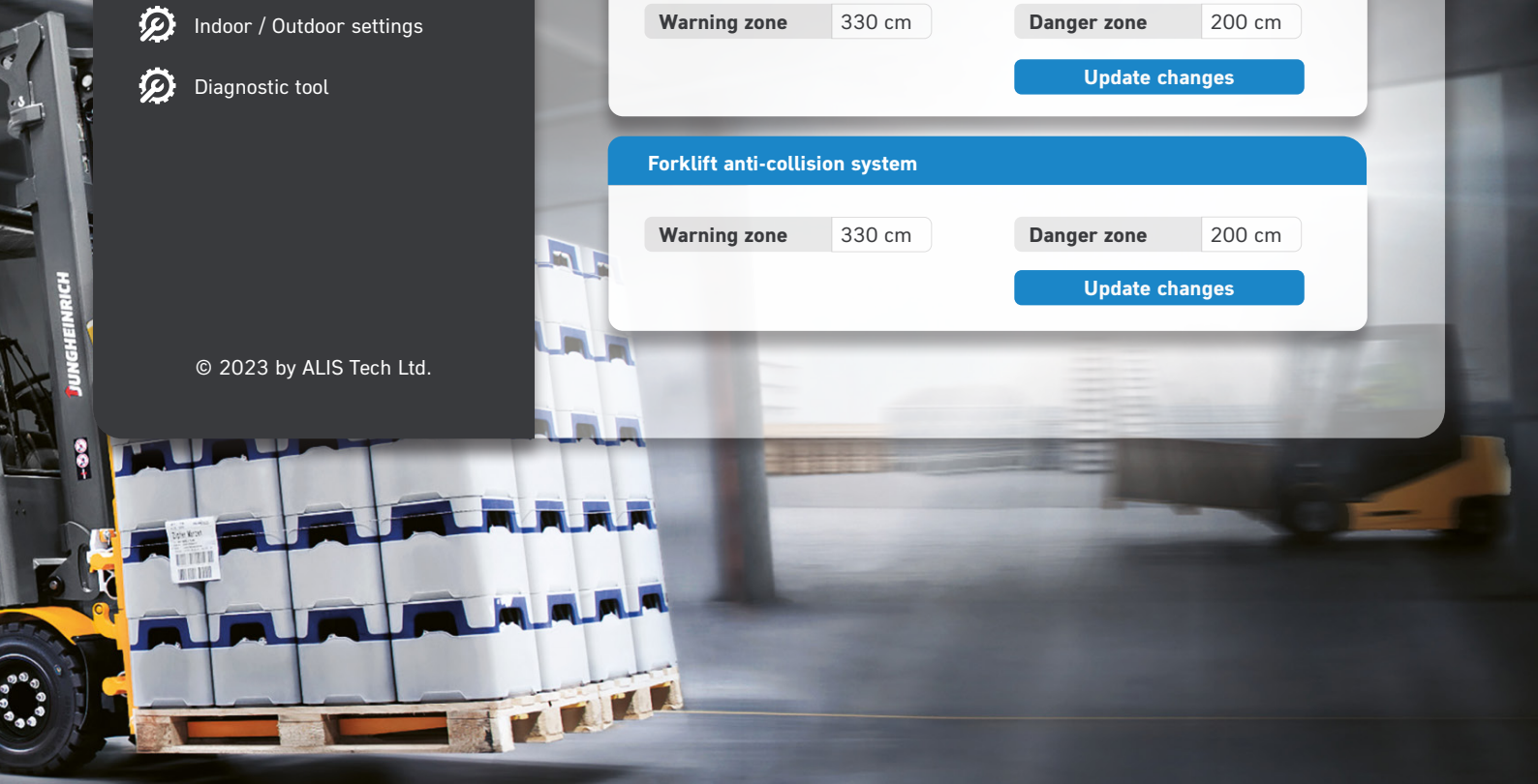
Update changes

### Forklift anti-collision system

Warning zone 330 cm


Danger zone 200 cm

Update changes







 case of study



Suspended Load Safety

# Crane Collision Avoidance Solution

- ✓ Timely warning of the pedestrian about the approaching crane hook via vibration wrist band.
- ✓ Optic/opto-acoustic signalization inside the forklift cabin to warn about the danger of suspended load.
- ✓ Smart LED visualisation of moving suspended load.
- ✓ Possible extension by AI-powered camera solution for pedestrian detection in critical zones.

## To Reduce The Risk Around Suspended Loads

Smart LED visualisation increase the level of safety for operators and employees working nearby the area of suspended loads.



**761**

up to **761** crane related accidents per year

**90 %**

**90 %** of crane related accidents caused by a human error

**\$15 million**

**\$15 million** fine for fatal accident caused by crane







## AI-Powered Cameras & UWB

# Pedestrian Collision Avoidance Solution

The UWB forklift anti-collision system is fully compatible with AI-powered cameras detecting pedestrians and other obstacles. AI offers the smooth upgrade of the anti-collision solution with no necessity to equip the pedestrians by any device.

### Technical data of AI detection:

- ✓ Set up the size of danger/warning/safe zones;
- ✓ Set up the tolerance of pedestrian detection;
- ✓ Integrate up to 4 cameras to reach 360° view.

# Combination Of UWB Technology with AI

- ✓ 3D monitoring of pedestrians and other obstacles with a timely warning inside the forklift cabin.
- ✓ 2-phase speed deceleration of forklift truck towards other forklift trucks.
- ✓ Speed zoning.
- ✓ Intelligent interaction with LED floor markings.

# 140

over **140** workers are injured by forklifts annually

# 38 %

**38 %** of forklift-related accidents happen in goods-producing industries

# 100

up to **100** fatal accidents annually





**Indoor & Outdoor  
Collision Avoidance  
Solution.**





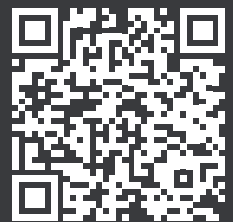




Základní příprava  
retraktorem

Bezpečnostní předpisy  
provozování  
retraktorem

**JUNGHEINRICH**



case of study

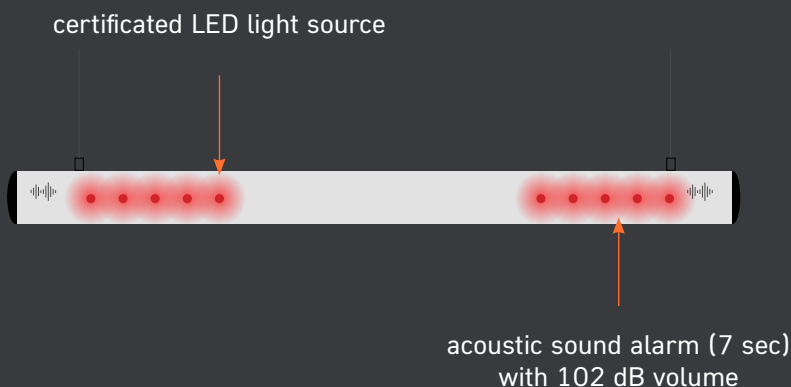


## Excessively Raised Loads

# Interactive Safety Protection Of Lowered Profiles

Ensuring safe passage under lowered profiles without accidents caused by excessively raised loads. The system is equipped with an intelligent impact sensor, which triggers a high-frequency sound alarm and flashes LED signaling lights in the event of an impact.

<b>Dimensions</b>	<b>1 800 x 140 [mm]</b>
<b>Power type-standard</b>	<b>12 VDC - 230V AC / battery</b>
<b>False alarm detection</b>	<b>smart impact sensor - false alarm proof (ex. wind)</b>
<b>IP cover</b>	<b>IP 20 (standard) IP 44 (on demand)</b>
<b>Material</b>	<b>HDPE High-Density Polyethylene</b>
<b>Price level</b>	<b>603 - 893 EUR</b>



# 11 %

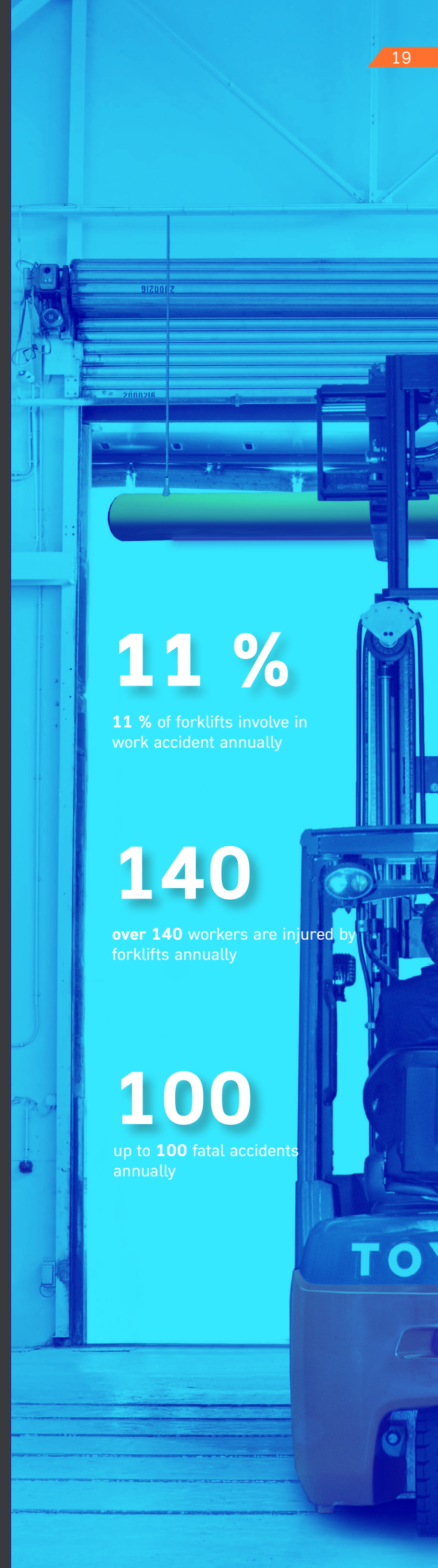
11 % of forklifts involve in work accident annually

# 140

over 140 workers are injured by forklifts annually

# 100

up to 100 fatal accidents annually





Trusted By 400+



VOLVO



HYUNDAI



SKODA

Nestlé

**ALIS Tech Ltd.**

Tuřanka 1222/115, Slatina 627-00 Brno, Czechia  
E: [sales@alis-tech.com](mailto:sales@alis-tech.com) | T: +420 605 020 977

CIN: 06728103 | VAT ID: CZ06728103



Co-funded by  
the European Union



MINISTRY OF INDUSTRY AND TRADE  
OF THE CZECH REPUBLIC