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Forklift Safety / Digital Intelligent Solutions

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01

Intelligent Imaging System

Forklift operation areas suffer from severe blind spots due to mixed personnel traffic, multiple obstacles, and narrow pathways. If we could equip forklifts with intelligent "eyes" , providing monitoring free of blind spot for comprehensive surveillance, the collision risk of the vehicle could be eliminated. The goal can be achieved through Stonkam’s intelligent vision system.

This system consist of HD cameras and displays installed on forklifts, enabling visible areas for driver even there are blind zones. With ultra-high-definition imaging and low-light night vision technology, it ensures seamless nighttime operations by illuminating darkness. When equipped with laser-positioned camera devices on forks, operators can handle cargo unimpeded by visual obstructions, achieving both safer and more efficient workflows.

Forklift Laser Positioning Solution (Regular Wireless)

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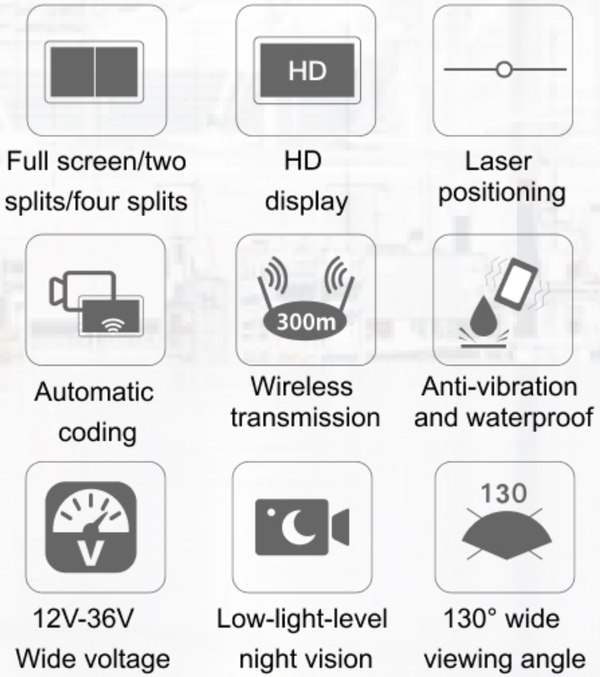
Laser Positioning System

The perfect high-definition digital wireless monitoring system is composed of a high-definition waterproof display, high-definition wireless cameras, and laser positioning cameras. Drivers can be free from the interference of visual obstructions. The laser positioning device is used to locate the blind spots in the field of vision, which plays a strong auxiliary role in forklift loading. It features low operation failure rate and high efficiency.



Full screen/two splits/four splits | HD display | Laser positioning

Automatic coding | Wireless transmission | Anti-vibration and waterproof

12V-36V Wide voltage | Low-light-level night vision | 130° wide viewing angle

HDW873

2.4GHz wireless camera

- IP69K

HDW814P

Laser forklift camera

- With magnet
- Mounted on fork arm

HDW125Q

7″ Waterproof Wireless Quad Monitor

- 2.4GHz, supports multiple display modes
- Supports automatic code matching
- Transmission distance up to 300 meters
- IP66 waterproof

Laser Positioning (Regular Wireless)

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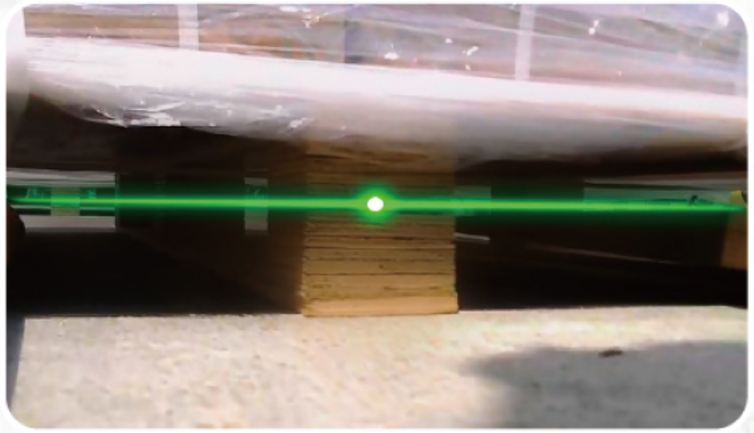
With the laser positioning camera system, operators can locate blind spots, making it easier to operate forklifts for loading and unloading, reducing operational failure rates and improving work efficiency.



Forklift Laser Positioning Solution - Forklift Pallet Alignment Reminder, Laser AI Light Control System (AI Wireless)

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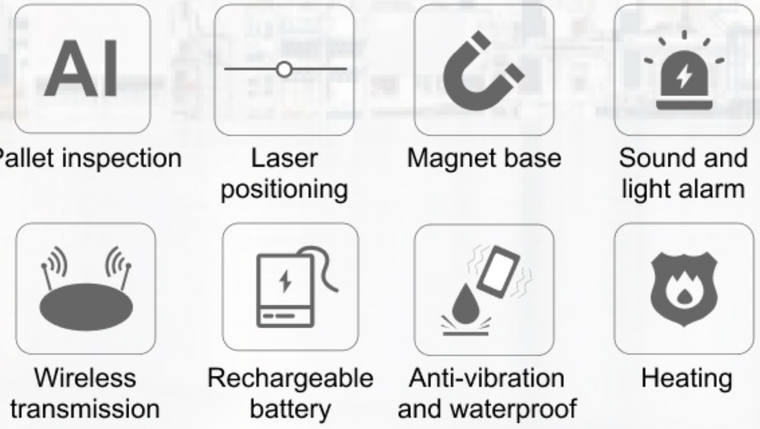
High Definition Wireless Monitoring System

- 1080P wireless forklift cameras;
- Single-line / Cross-line green laser for precision operation assistance;
- Transmission distance: 400m;
- IP rating: IP69K (cameras), IP66 (monitors);
- Built-in AI algorithm (HDW277RS), supporting pedestrian detection, forklift detection, pallet detection and laser positioning with adaptive illumination;
- Equipped with video recording for accident evidence.



Laser Forklift Camera
(Stainless steel casing)

HDW864
- Automatic heating function（convenient for cold storage operation）
- Installed at the bottom of the bracket center point

HDW814P
- With magnet
- Mounted on wishbone

AC594

Rechargeable Battery
- Magnet base
- Maximum power 25000mAh

HDW871

2.4GHz Wireless Camera
- Waterproof

HDW277RS

7" AI Waterproof Wireless Monitor
- Built-in AI algorithm to realize forklift pallet alignment reminder, Laser AI light control function; BSD pedestrian/vehicle detection
- Alarm video

AC501

External Alarm

Forklift Pallet Alignment Reminder, Laser AI Light Control Function

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AI Pallet Detection

Drivers can locate pallet pockets using an AI monitor that shows an elevated fork view, with visual focus guides and audible alerts.

Smart Laser Switching

Laser will be activated automatically during fork arm elevation.

AI Pedestrian Detection Function

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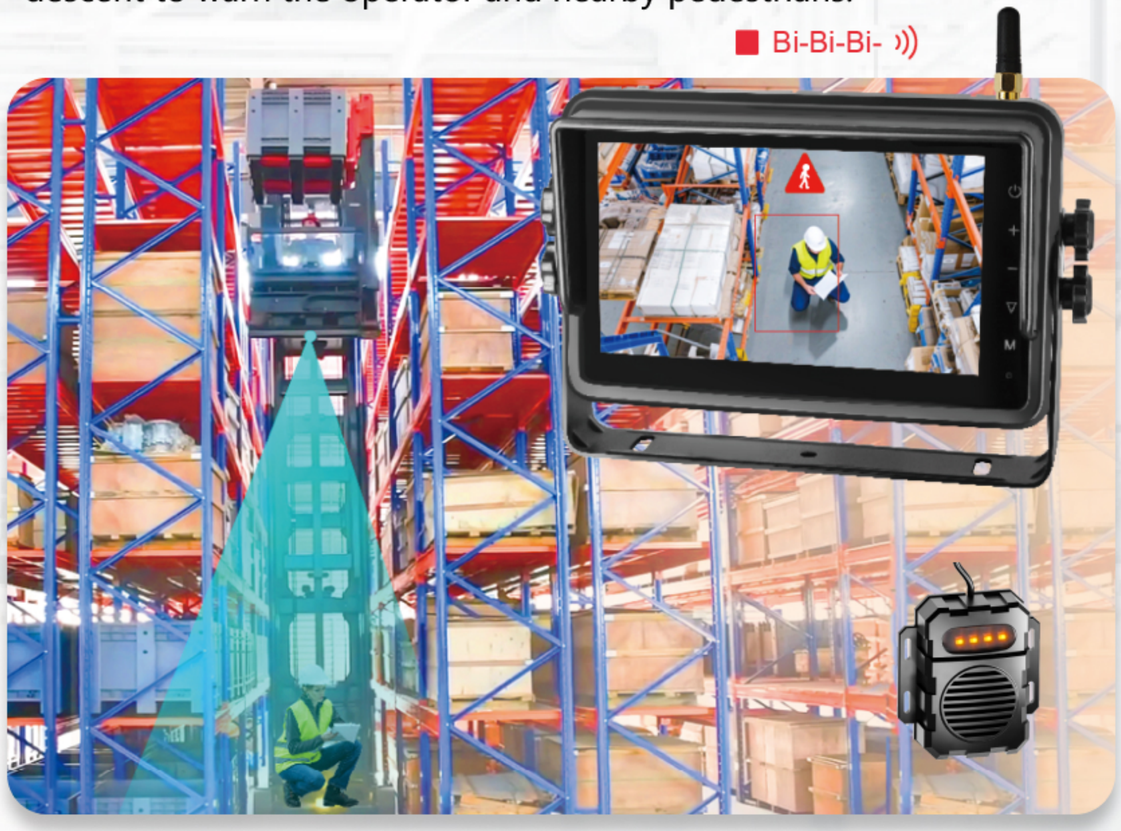
AI Pedestrian Detection - Bird View

Monitors the ground area, activating visual and audible alarms during descent to warn the operator and nearby pedestrians.



AI Pedestrian Detection - Front View

Detects pedestrians in diverse postures to alert operators and prevent collisions.

02

Anti Collision Management

Frequent interactions between vehicles and pedestrians in industrial zones, combined with complex working environments and limited driver visibility, significantly increase the risk of collisions, scrapes, and rollovers due to factors include driver fatigue, blind spots, reversing, and turning maneuvers. Such incidents may lead to serious consequences such as production downtime, heavy financial losses, and managerial liability.

When it comes to collision prevention, we keep asking ourselves the critical questions:

Can forklifts proactively avoid accidents with pedestrians?

Can early-warning devices notify operators in advance when entering blind spots?When collisions are unavoidable, how can we minimize the damage?

Safety is the foundation of business operations — let STONKAM empower your workplace with smarter vision solutions!

Anti-collision Management Solution - 360° Anti-collision Warning + Speed Limit + Parking

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AI 360° Collision Avoidance Warning + Speed Limit + Parking

- 1080P input / output with split-view mode;
- Integrated with BSD + FCW + Speed Control + Braking Control;
- Detection range: 5m / 40m;
- Switchable 3D/2D mode with super-mirror rear view;
- Automatic calibration within 1 minute;
- Equipped with video recording for accident evidence.

FHD808

360° panoramic camera

- Waterproof, compact and easy to install

HD297D

10.1" Waterproof 4G Monitor

- Touch screen + metal housing

BVA18P

AI 3D 360° Panorama

- Waterproof control box
- AI global detection
- Integrated BSD and FCW functions
- One minute automatic calibration

BSA09

Ultrasonic radar

- Detection distance: 0.6~5m
- Waterproof control box IP65, probe IP67
- Support HD video input and output

BSA09

Millimeter Wave Radar (optional)

- Detection angle: horizontal (120°) / vertical(14°)
- Detection distance: 40m

AI 360 Detection Function Demonstration

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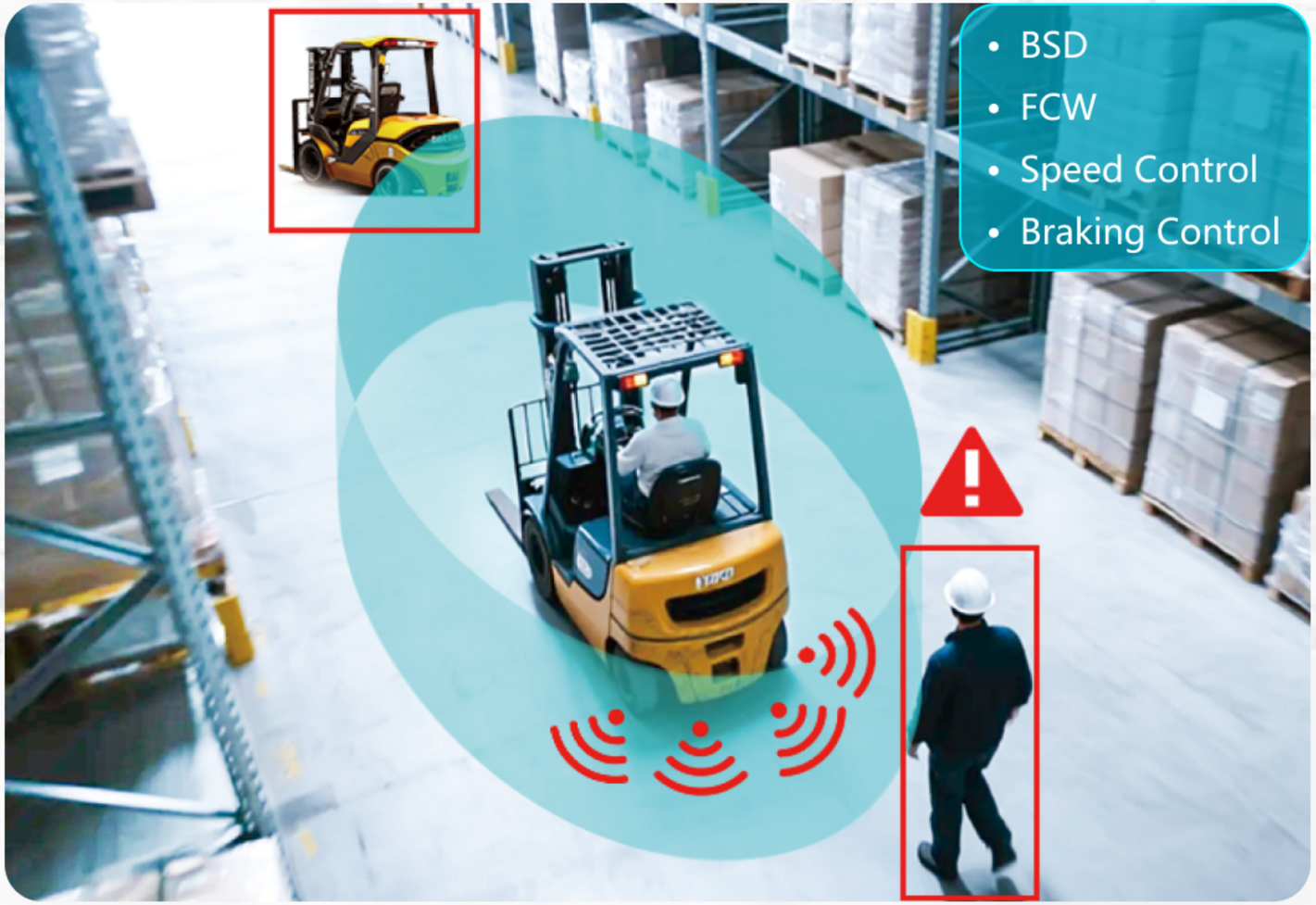
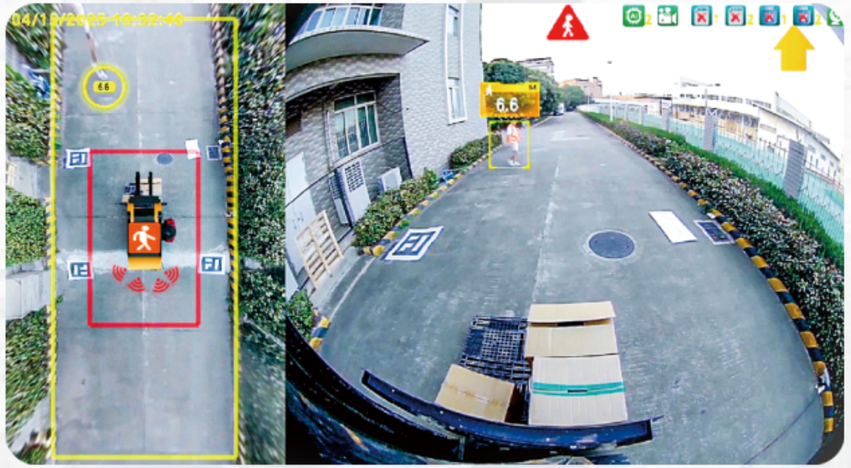
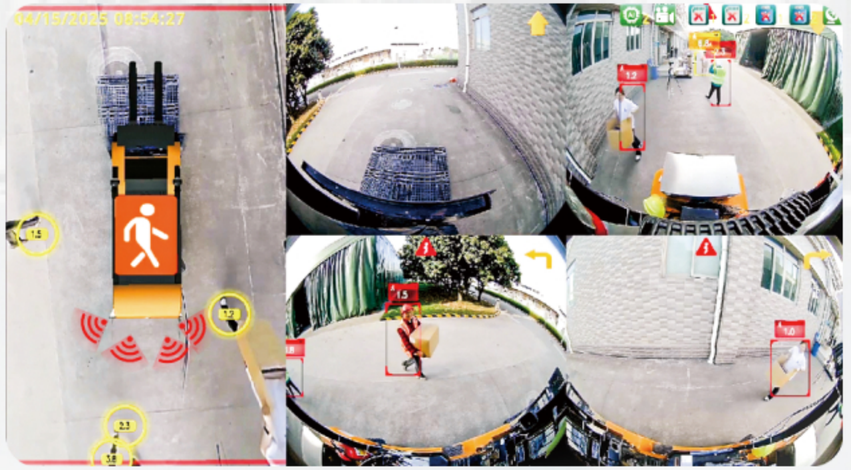
AI Safety Zone



360° Bird View + Radar Sensor





Anti-collision Management Solution - AI BSD (AI Camera)

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BSD Pedestrian And Vehicle Detection

BSD pedestrian and vehicle monitoring: when the pedestrian enters the preset anti-collision area of the forklift, the camera on the forklift will detect his presence and issue an audible and visual alarm to alert the driver that there are pedestrians nearby.

Anti-collision Management Solution - AI BSD (AI Monitor)

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BSD Pedestrian And Vehicle Detection

BSD pedestrian and vehicle monitoring: when the pedestrian enters the preset anti-collision area of the forklift, the camera on the forklift will detect his presence and issue an audible and visual alarm to alert the driver that there are pedestrians nearby.

FHD639

Waterproof camera

- IP69K

HD297RS

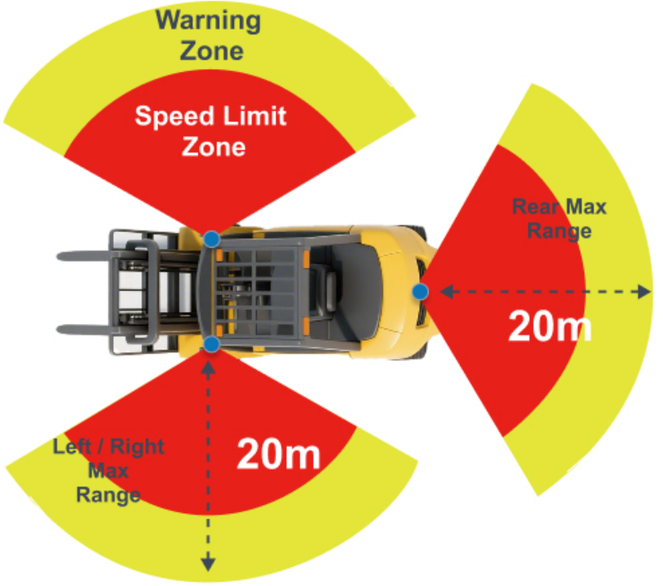
10.1" Waterproof AI Monitor

- Touch screen + metal housing
- BSD pedestrian/vehicle detection

AI BSD function

3 Pedestrian Detection Cameras

- 2 side view cameras (130°) + 1 rear view camera (130°).
- Maximize front view visibility during cargo loading/unloading.



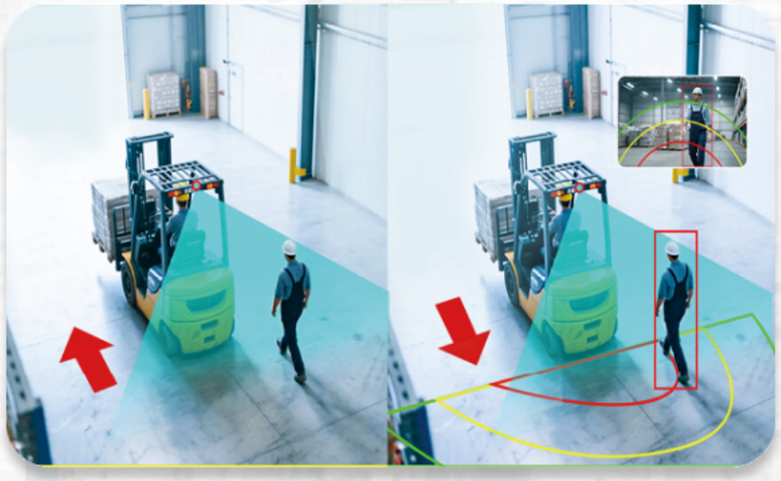
- Camera coverage：270°
- Max detection range：20m

Alert Types	
	Warning Zone: Detected
	Speed Limit Zone: Brake !

Other AI Features

AI pedestrian detection + three-side light projection range recognition

Automatically detects red lights zone and triggers real-time alerts upon pedestrian detection.



AI pedestrian detection + motion state estimation function

Analyzes forklift movement & surroundings via AI cameras for collision prevention.

AI Pedestrian Detection + Sign Recognition

Recognizes markers to trigger alerts or autocontrol forklift operation.

03

Forklift Digitalization

In modern industrial production, rising labor costs and intensified pursuit of lean management practices have made improving workforce efficiency and equipment utilization a perpetual priority.

As forklifts become indispensable tools for manufacturing and logistics, critical questions arise:

- Are you still managing forklift assets through manual record-keeping?
- Are newly purchased forklifts truly meeting utilization targets?
- Can data analytics enable optimized scheduling across unevenly loaded workshops?
- Does time-clock-based driver evaluation reliably prevent slacking off?
- How to scientifically mitigate risks and prevent accidents?

Forklift digitalization holds the answers you need.

Digital Management Solutions

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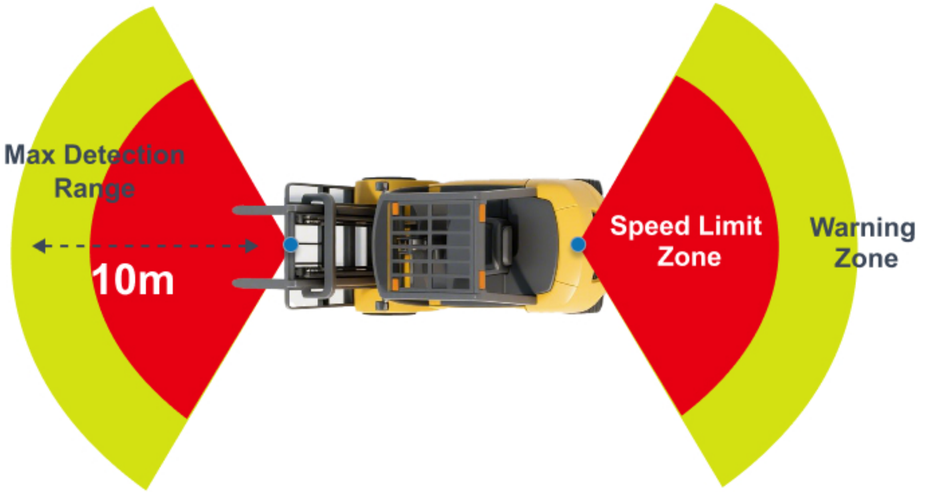
STONKAM's MDVR smart forklift safety monitoring system combines IoT technology with intelligent monitoring systems to comprehensively enhance the interconnection capabilities of equipment and achieve digital and intelligent monitoring of people, vehicles, and safety. It allows you to easily and cost-effectively improve the safety of forklift operations and effectively improve the productivity of your fleet, further helping you take your business to new heights.

AI BSD Function

2 AHD Cameras

- 1 front view camera (130°) + 1 rear view camera (130°).
- Real-time pedestrian detection in work zones.
- Audio alerts triggered when the forklift approaches a dangerous proximity.
- Switch signals output (No ID badges required for personnel).



- Camera coverage：260°
- Max detection range：10m

Alert Types	
	Warning Zone: Detected
	Speed Limit Zone: Brake !

Detect fatigue and driver distraction to minimize human-error risks.

Real-time Surveillance

Fatigue Detection

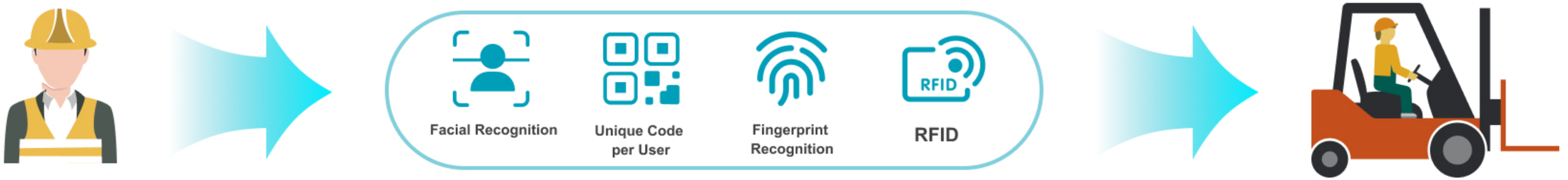
Phone Use Detection

Smoking Detection

Extended Function

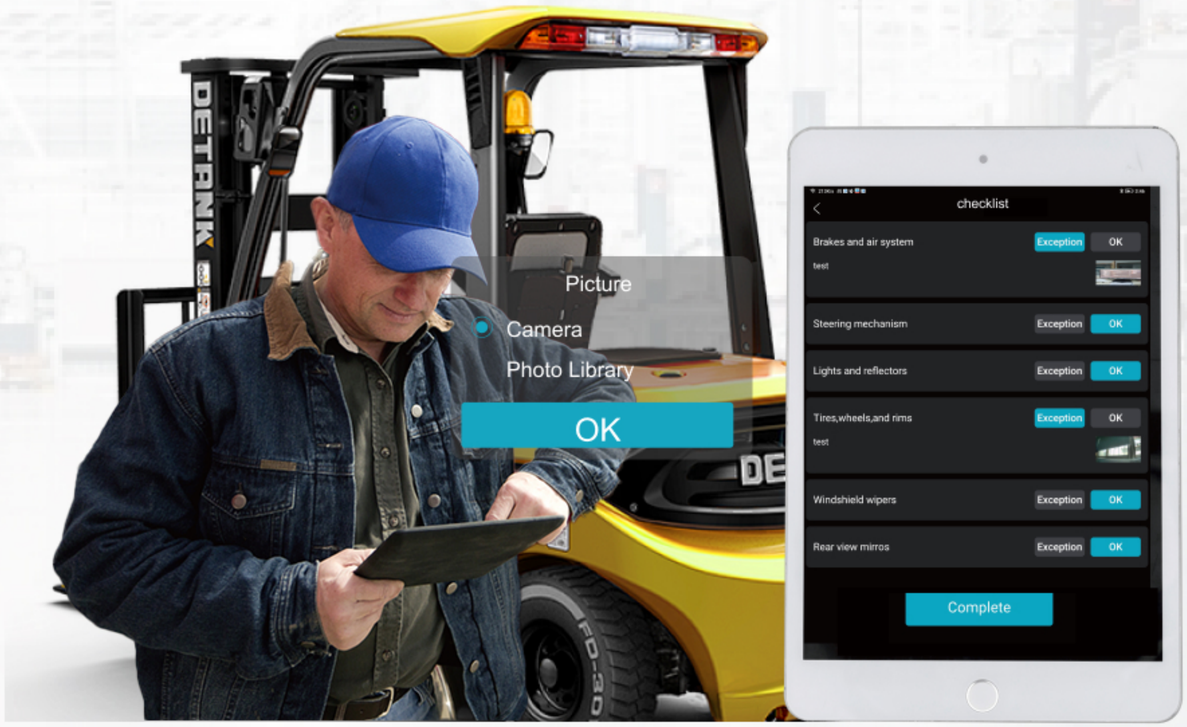
Driver Authorization & Status Check

Automatically detect seat-belt engagement during forklift startup. Operation will be prevented if seat-belt remains unfastened.



Overspeed Alarm & Control

Trigger visual/audible alerts and activate speed limit when exceeding preset maximum velocity thresholds.



DVIR -Electronic Driver Vehicle Inspection Report

DVIRs are required and enforced by the Federal Motor Carrier Safety Regulations.

DVIR compliance helps to improve road safety. DVIRs can be completed electronically using a tablet or smartphone, rather than using the paper form.

Commercial vehicles drivers need to have pre-trip and post-trip inspections and report on the mechanical defects on any commercial vehicle they operate. This enforces vehicles inspection before and after every trip.

Forklift Intelligent System Framework Topology Diagram

1 Display Layer

Multimedia Large Screen

PC Client

Mobile Client

2 Application Layer

- Detection and Warning
- Traceability Managem
- Real-time Monitor

- Driver Permission Information Collection and Identification
- Seat Belt Detection and Monitoring
- Driver Behavior Monitoring
- Speeding and Speed Limit Alarm Management
- Pedestrian Collision Avoidance Warning
- Unsafe Behavior Recognition
- Information Data Collection
- Violation Behavior Analysis

3 Support Layer

- Real-time Video
- GPS Location
- Identity Recognition
- Data Collection
- Audio-Visual Alarm
- Evidence Playback
- Seat Belt Detection
- Behavior Monitoring
- Real-time Speed Measurement
- Collision Avoidance System

4 Transmission Layer

- Wi-Fi
- 4G
- Switch

5 Data Sources

- In-Vehicle Terminal
- Sensors
- Vehicle Location
- Vehicle Trajectory
- More Data

Forklift Intelligentization

Supported by new-generation information technologies such as the Internet of Things, big data, cloud computing, artificial intelligence, mobile internet, and industrial internet, our system focuses on vehicle information management, personnel information management, driver permission management, inspection management, vehicle maintenance management, forklift safety warning systems, remote dispatch management, location services, violation event statistics, efficiency reports, and other business areas. It integrates data resources to achieve real-time data transmission and uploading and to provide technical support for monitoring, early warning, risk assessment, and collaborative control. The goal is to build intelligent forklifts with digital management and efficient operation.

The smart monitoring system enables real-time monitoring of violations during operations, such as failure to fasten seat belts, over-speeding, off-limits operation, and leaving the forklift unattended when the operator is away.

Driver Permission Information Collection and Identification

Seat Belt Detection and Monitoring

Driver Behavior Monitoring

Vehicle Speeding Alarm Management

Pedestrian and Vehicle Active Collision Avoidance Warning

Real-time GPS Location Reporting

Cloud-based Visualization Platform

STONKAM®

Successful Case

UK Market

AI Intelligent Management Application

Forklift management lacks real-time monitoring, and inadequate supervision by forklift administrators leads to frequent speeding, collisions, and cargo drops.

1. The factory roads are relatively narrow, increasing the probability of overtaking accidents. Drivers, in order to meet deadlines and save time, often speed and forcefully overtake without considering their surroundings, prioritizing task completion over operational safety.
2. More than 50% of forklift accidents are related to speeding. While company regulations explicitly require drivers to operate within the prescribed speed limits, compliance tends to fade over time without continuous reminders.

The customer has a firm stance on workplace safety. Our intelligent forklift management system conducts multi-dimensional analysis, including vehicle alarm analysis, alarm type classification, and driver behavior assessment, significantly enhancing forklift supervision and improving safety management.

China Market

Application of AI Collision Avoidance System

Forklifts play a crucial role in logistics systems, serving as the backbone of material handling and warehouse product transportation. During forklift operations, tasks such as loading, stacking, and transporting can be mechanized solely through driver operation. However, with forklift usage comes an inherent risk of accidents. According to statistics, numerous safety incidents occur each year. Customers approached us seeking a safety accident prevention solution for forklift operations within their facilities. After on-site inspections and discussions with our engineers, we formulated a solution utilizing our forklift collision avoidance system.

After more than six months of application, the forklift collision avoidance system has received high recognition from our customers. The system is easy to install and effectively prevents and reduces accidents, ensuring the safety of both lives and property. This contributes to enterprise growth and has led to its promotion across multiple facilities.

Japan Market

Forklift Operations Safety System Management

Our forklift safety management system is designed to manage forklift operations and prevent accidents within the factory. Based on the warehouse environment and operational requirements, our safety consultants developed a solution for managing forklift safety and accident prevention. The samples passed installation testing at our headquarters and received high recognition from the company.

1. Authorized vehicle use to prevent misuse and improper parking, ensuring that accident responsibility is assigned to individuals.
2. Real-time transparency of forklift, department, and shift efficiency, enabling precise temporary scheduling and scientifically optimizing vehicle usage to improve overall utilization.
3. Complete record of safety incidents, ensuring the implementation of safety protocols.
4. Forklift utilization and driver management are incorporated into a performance evaluation system for assessment purposes.

Contact Us

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