



SAFEYE

**Collision Prevention Systems
for Mobile Machines**

Pedestrian and Machine Safety



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Collision Prevention Systems for Mobile Machines

Pedestrian and Machine Safety

SAFEYE is an advanced stereoscopic machine vision system that detects and differentiates between pedestrians, industrial machines like dump trucks, excavators, forklifts, light vehicles, and other machines typically found on industrial sites.

With the most advanced artificial intelligence (AI) built into **SAFEYE**, operational safety is improved while employees and stakeholders acknowledge safety as a valued and important priority.

SAFEYE only generates alerts to operators when absolutely required. Thus avoiding distraction alerts which are not relevant.



ENVIRONMENTAL



Wide temperature specification:
Smart Display: -20°C to +55°C
SAFEYE Camera: -25°C to +70°C



Waterproof and dustproof (IP69K sensor, IP65 display and controller).



Compatible with all types and brands of industrial vehicles
(stacker and reclaimers, forklifts, wheel loaders, excavators, dumpers and dozers).



Designed to operate in harsh environments.

FEATURES

- Accurate machine detections including ADTs, rigid dump trucks, excavators, dozers etc.
- Accurate pedestrian detection not requiring RFID tag, reducing cost.
- Low light sensitive machine vision sensors.
- Ultra-rugged design for tough environments.
- Multiple machine vision sensor configurations (up to 6 sensors) and options for any type of machine installation.
- Customisable detection zones and three distance configuration zones.
- Compliance to MHSA & DMR regulation 9.8(2)(d), 20.9.2, 20.9.1, 8.8(2)(c), 8.10.2.1, 8.10(8), 20.7.3, Section 10 & 21.
- Level-9 Compliant according to EMESRT and MOSH requirements.
- ISO 21815 compliant
- Fail to safe (built in self-test).
- 200 hours of video recording and event logs.
- Remote access and configuration through **CLEARVIEW**.
- Video monitoring via **CLEARVIEW**.
- **CLEARVIEW** offers remote tracking and near-miss monitoring.
- Accurate infrastructure detection using in-built VIDAR (Vision Detection & Ranging).
- Custom object detection using ArUco codes.
- GNSS speed limits and warnings.
- Audible and on screen warnings.
- 7" or 10" Smart Display
- Integrated WiFi, Cellular, Ethernet, GNSS, CAN, I/O.

Accurate 360° pedestrian & machine detection

Suitable for surface and underground applications.

FEATURES

Remote Video Monitoring

Remote **SAFEYE** Configuration

GNSS Monitoring of Machines

Speed Monitoring of Machines



Custom object detection using ArUco codes

Connectivity Monitoring to **SAFEYE** Sensors

SAFEYE System Health (including dirty-lens monitoring)

Remote Software Updates

Detection Range: People
<30 meters day/night*

Detection Range: Machines
<75/30 meters day/night*

Detection Range: Infrastructure
<10 meters day/night*

BENEFITS



No Tags



No Interference



Reduced Accidents



Expandable Detection Algorithms Using Artificial Intelligence



Improved Operator Awareness



Improves Safety Around Industrial Machines

APPLICATIONS

Mining & Quarrying Operations

- Detecting and alerting operators about the presence of workers near heavy machinery.
- Preventing collisions between vehicles and equipment in mining sites.

Construction Sites

- Monitoring construction zones to prevent accidents involving cranes, bulldozers, and other heavy equipment.
- Ensuring safety during excavation and demolition activities by detecting nearby workers.
- Enhancing safety in high-traffic areas where multiple machines operate simultaneously.

Industrial Manufacturing

- Preventing accidents in warehouses and manufacturing plants by detecting workers around automated guided vehicles (AGVs) and forklifts.
- Monitoring assembly lines to ensure the safety of workers operating in close proximity to robotic arms and other machinery.
- Enhancing safety in material handling and logistics operations.

Port and Shipping Yards

- Detecting personnel around container handling equipment, such as gantry cranes and straddle carriers.
- Preventing collisions between vehicles and workers in busy port environments.
- Enhancing safety during loading and unloading operations.

Agriculture and Forestry

- Detecting people around tractors, harvesters, and other agricultural machinery.
- Preventing accidents in forestry operations by monitoring the presence of workers near logging equipment.
- Enhancing safety during planting and harvesting activities.

Oil and Gas Industry

- Monitoring drilling sites to prevent collisions between vehicles and machinery.
- Ensuring safety in refineries and processing plants by detecting personnel near hazardous equipment.
- Enhancing safety during transportation and logistics operations within oil and gas facilities.

Railway and Transportation

- Preventing accidents by detecting personnel on or near railway tracks.
- Monitoring train yards to ensure safety during shunting and maintenance activities.
- Enhancing safety in bus depots and maintenance facilities by detecting workers near vehicles.

Waste Management and Recycling

- Detecting workers around waste collection trucks and recycling machinery.
- Preventing accidents in waste sorting and processing facilities.
- Enhancing safety during waste collection and transportation operations.

Utilities and Power Plants

- Monitoring power plants and utility facilities to prevent collisions between workers and machinery.
- Ensuring safety during maintenance activities in high-risk areas.
- Enhancing safety in substations and transmission line sites.

Aviation and Aerospace

- Detecting personnel and equipment around aircraft during ground operations.
- Preventing accidents in hangars and maintenance facilities.
- Enhancing safety during aircraft towing and parking activities.
- These applications highlight the versatility and importance of the **SAFEYE** collision avoidance system in improving safety across various industries.

*With IR illumination hardware deployed

CLEARVIEW

Safety Trends, Analytics, and System Health Information

- **CLEARVIEW** is a remote analytics dashboard for tracking the position of machines while reporting interactions and near misses between pedestrians, machines, infrastructure, and objects.
- **CLEARVIEW** provides an easy and intuitive dashboard that allows you to monitor a complete fleet of industrial machines, reports and analytics such as:
 - Heatmaps for high-risk areas:
 - Near-miss monitoring of pedestrians
 - Near-miss monitoring of machines
 - Remote video monitoring
 - Remote **SAFEYE** configuration
 - GNSS position monitoring of machines
 - Speed monitoring of machines
 - Infrastructure VIDAR detection monitoring
 - Custom object detection monitoring
 - Connectivity monitoring to **SAFEYE** sensors
 - **SAFEYE** system health (including Obscured-Lenses)
 - Remote software updates
 - Trend analysis - Safety improvement over time



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Cutting edge technology
meets **unmatched safety**
for a secure tomorrow.

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ARGOS



ARGOS LITE



ARGOS MOBILE

