BLINDSIGHT INFORMATION PACK

INTELLIGENCE

BY PRESIEN

SAFETY MADE SIMPLE

WITH ARTIFICIAL INTELLIGENCE

3

INTELLIGENCE

BY PRESIEN

EFFORTLESSLY PROTECT PEOPLE IN DYNAMIC ENVIRONMENTS

BLIND SIGHT

INTELLIGENCE

BY PRESIEN

THE SAFETY IMPERATIVE

There are roughly 150 fatal accidents and 100,000 serious injuries in the Australian workplace each year[1]. Heavy industries – construction, logistics and warehousing, agriculture and forestry, manufacturing, and mining – disproportionality contribute to these statistics, with roughly 65% of all fatalities[2].

Vehicle-related accidents are by far the leading cause of fatalities, causing roughly 65% of all workplace fatalities.

The direct cost of a serious workplace accident is difficult to estimate. Industry rule-of-thumb estimates suggest $1m. However, the indirect costs of accidents have been conservatively estimated at 3 times higher than direct costs[3].

The national-level costs of these fatalities and injuries is estimated at AU$61.8 billion and AU$17 billion for associated property damage, representing 4.1% of GDP.[4] Australian businesses spend over AU$100 billion annually on prevention, insurance, and compensation.[5]

The real state of safety remains unknown.

Current safety is commonly measured and reported by Accident Frequency Rate (AFR)[6] and Lost Time Injury Frequency Rate (LTIFR)[7]. These metrics are collected using manual, and generally paper-based, processes and are lag indicators of actual accidents.

Current processes and metrics do not adequately capture the far more common near-misses and unsafe behaviours. Every near-miss has the potential to be a severe or fatal accident.

Safety reporting is therefore based on an incomplete small sample size and there is no real understanding of true safety, the risk factors, how well interventions really work, and where attention should be focused.

[1]Safe Work Australia, Work-related traumatic injury fatalities Australia 2019, released 20 November 2020, https://www.safeworkaustralia.gov.au/collection/work-related-traumatic-injury-fatalities. [2]Ibid. [3]National Occupational Health and Safety Commission, 2004, The Cost of Work-related Injury and Illness for Australian Employers, Workers and the Community. [4]Safework Australia, Cost of injury and illness statistics, modified 9th May 2017, https://www.safeworkaustralia.gov.au/statistics-and-research/statistics/cost-injury-and-illness/cost-injury-and-illness-statistics. [5]Safework Australia, The cost of work-related injury and illness for Australian employers, workers, and the community: 2012-13, November 2015. [6]AFR is typically defined as the total reported injuries per 100,000 employee hours or per 100 employees. [7]LTIFR is typically defined the number of work injuries that require at least 1 day off work per 1,000,000 hours worked.

THERE IS A MORAL AND ECONOMIC OBLIGATION TO DO BETTER

150

Fatal accidents in the Australian workplace every year

100,000

Serious injuries in the Australian workplace every year

>60%

of workplace fatalities are vehicle related

>3x

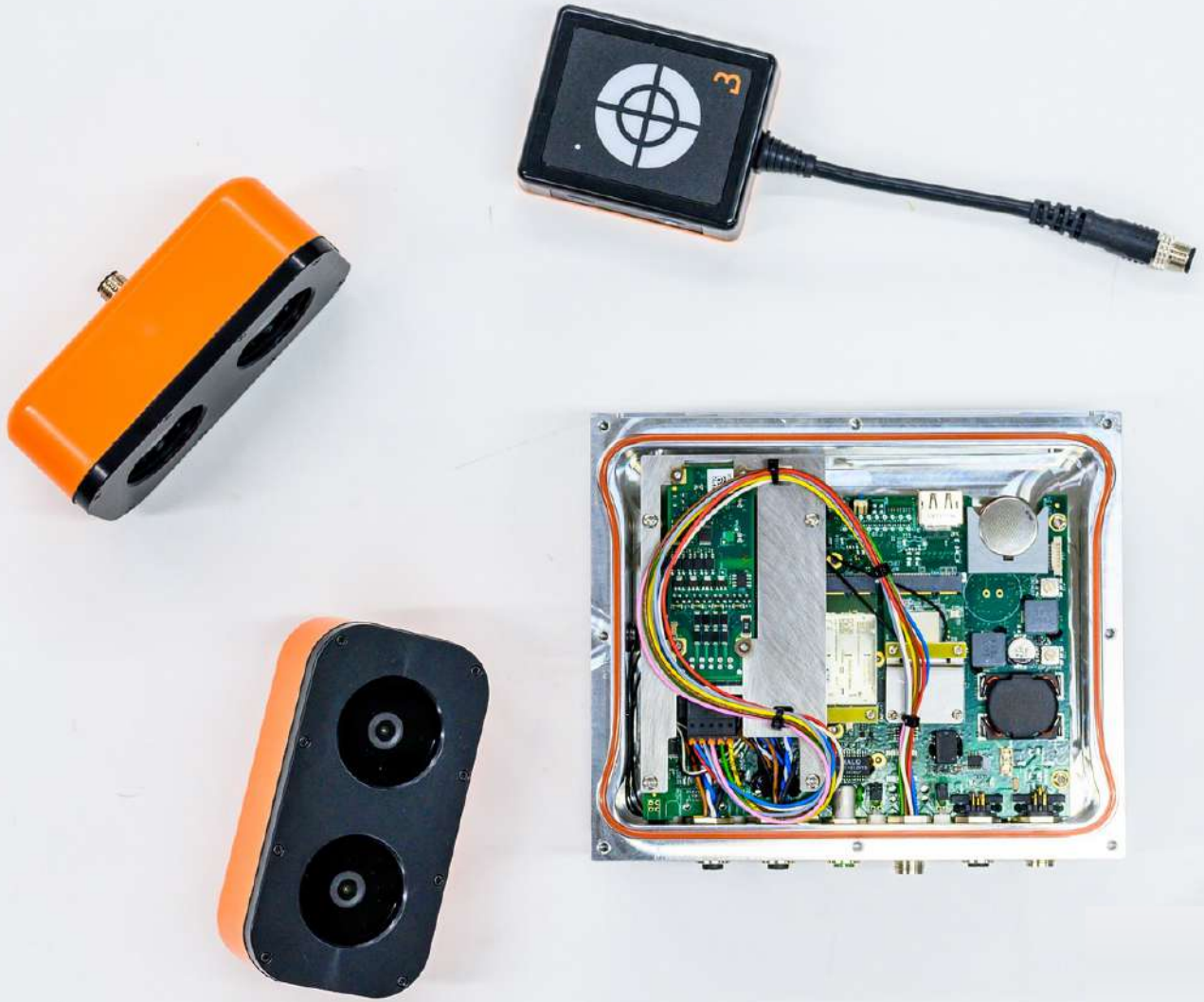
Indirect costs of accidents are >3 times higher than direct costs

What is Blindsight?

Blindsight is an artificial intelligence safety system for mobile plant and fixed infrastructure.

Blindsight stops accidents by alerting vehicle operators and people around to objects in blind spots and automates health and safety reporting, including video.

Blindsight increases understanding by automatically capturing the near-misses and unsafe behaviours that are rarely reported with manual processes.



Blindsight is a new standard in safety

3

UNDERSTANDING AND PREVENTING SERIOUS ACCIDENTS REQUIRES A NEW APPROACH. A NEW STANDARD.

Alerts for operators and people around
Blindsight stops accidents by alerting operators and people around, with multiple alert types.

Videos before, during, and after every detection
Blindsight provides video of before, during, and after every detection, to understand why the detection occurred and how to prevent or mitigate the risk.

Differentiates near-misses from general safety alerts
Blindsight differentiates and prioritises high risk near-miss scenarios and alerts stakeholders.

Automates safety and commercial and reporting
Blindsight provides automated reporting that is accessible from mobile devices and web platform. These reports and comparisons include detections, videos, near-misses, vehicle on/off, vehicle safe/unsafe, and location.

Mobile and fixed infrastructure use cases
Blindsight can be installed on mobile plant and fixed infrastructure. The same system can be used in many different applications.

Implemented without support infrastructure
Blindsight is an edge device and does not require wifi or 4G for alerts, physical tags or special identifiers to be placed on objects, or special machine inputs or integration.

Pre-trained AI
Blindsight comes pre-trained to detect people, vehicles, and traffic cones. It allows users to easily select only the object(s) to be detected, which prevents false positives and unnecessary alerts.

User-configurable alerts
Blindsight enables users to choose and configure their own alerts, to maximise alert impact and stop alert fatigue, without being locked into a proprietary ecosystem.

Constantly improving
Blindsight has 4G connectivity and over-the-air updates to allow the AI and functionality to be constantly updated and improved.

3
INDEX

BLINDSIGHT INDEX

The Blindsight Index is the number of near-misses per machine danger hour and is the next stage of safety reporting.

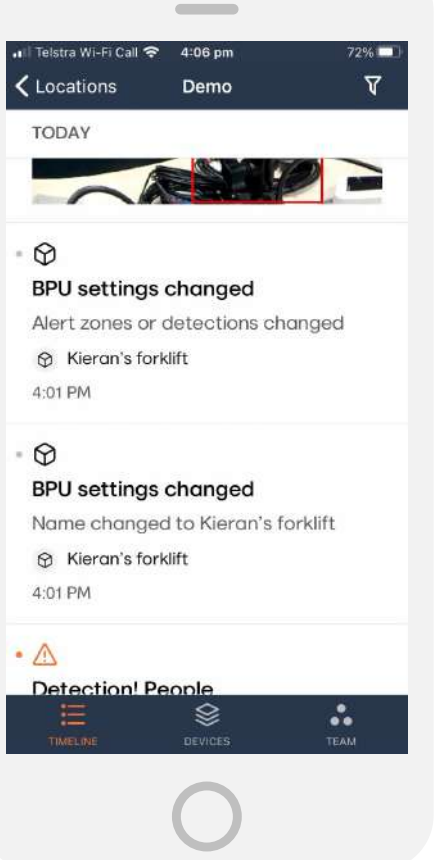
The Blindsight Index is an automatically generated lead metric that does not require an accident to have occurred for the risk to be identified. It focuses on the fatal and serious injury people-plant scenarios rather than the less severe work injuries that dominate Accident Frequency Rate (AFR) and Lost Time Injury Frequency Rate (LTIFR) metrics.

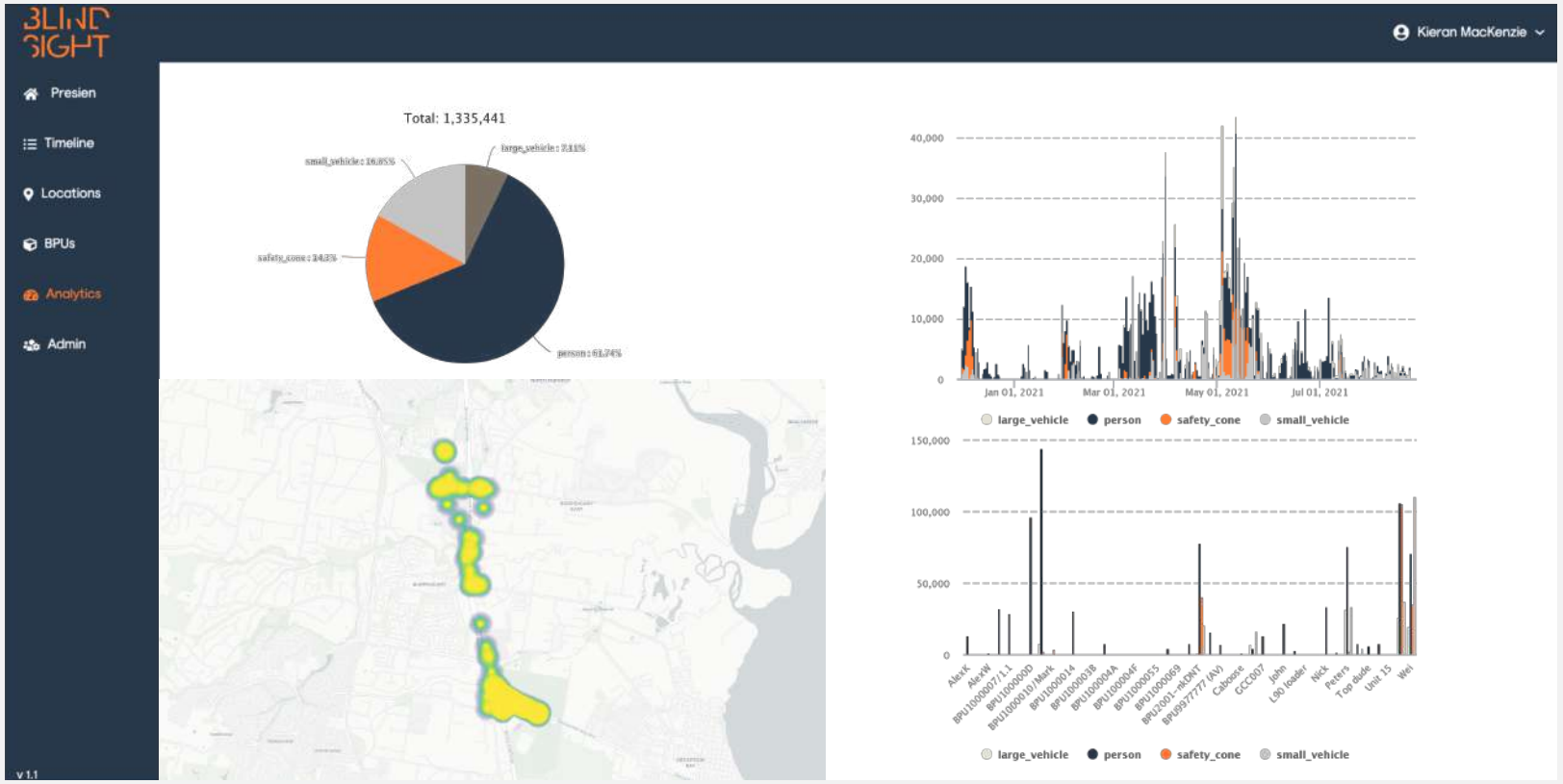
The Blindsight Index can be used to track and compare the safety in work activities, machine types, sites and company-wide, and against global peers.

THE NEW LEAD SAFETY METRIC

Blindsight provides automated insights

VIDEO AND DATA OF EVERY NEAR MISS AT THE CLICK OF A BUTTON.





The Blindsight value proposition

FOR OPERATORS

Alerts users to prevent accidents.

- Increased situational awareness to prevent accidents.
- Does not take control away from the operator.
- Increased confidence and productivity.
- Provides video evidence that an operator was not at fault during a near-miss scenario.
- Does not record the operator.
- Eliminates PTSD and turnover resulting from accidents.

FOR HEALTH AND SAFETY

Provides comprehensive automated insights into safety.

- Baseline current safety performance with automatically collected data and videos.
- Automatically filter near-misses.
- Compare risk and safety across different equipment types, sites, operating times, subcontractors,
- Justify interventions and spending.
- Measure the efficacy of health and safety manual reporting, programs, interventions, and trials.

FOR MANAGERS

Reduces risk and associated costs.

- Comprehensive and autonomously collected health and safety data with Blindsight Index lead indicators.
- Immediate notification of near misses and other high-risk scenarios.
- Create sustainable behavioural change and a proactive safety culture.
- Reduces business risk, associated costs, and publicity stemming from health and safety incidents.
- Reduces director-level personal liability risk.
- Comprehensive data to analyse for productivity improvements, commercial reporting, and project estimating.

AWARD WINNING TECH DEMAND

BHP
AURIZON
QueenslandRail
NSW GOVERNMENT Transport for NSW
LAING O'ROURKE
BMD
CSR
Fulton Hogan
FMG Fortescue The New Force in Iron Ore
RioTinto
ANGLO AMERICAN
Monadelphous

BLINDSIGHT AT A GLANCE

INTELLIGENCE

BY PRESIEN

DISCLAIMER

Blindsight is a safety augmentation device and not a critical safety system. Blindsight does not replace safety planning and best practice.

Sensors

No calibration
2x 90°

Processor

AI and communications

D-CNN trained with >15,000 hours real-world ML

Alerts

Visual | aural | haptic
Easy customisation

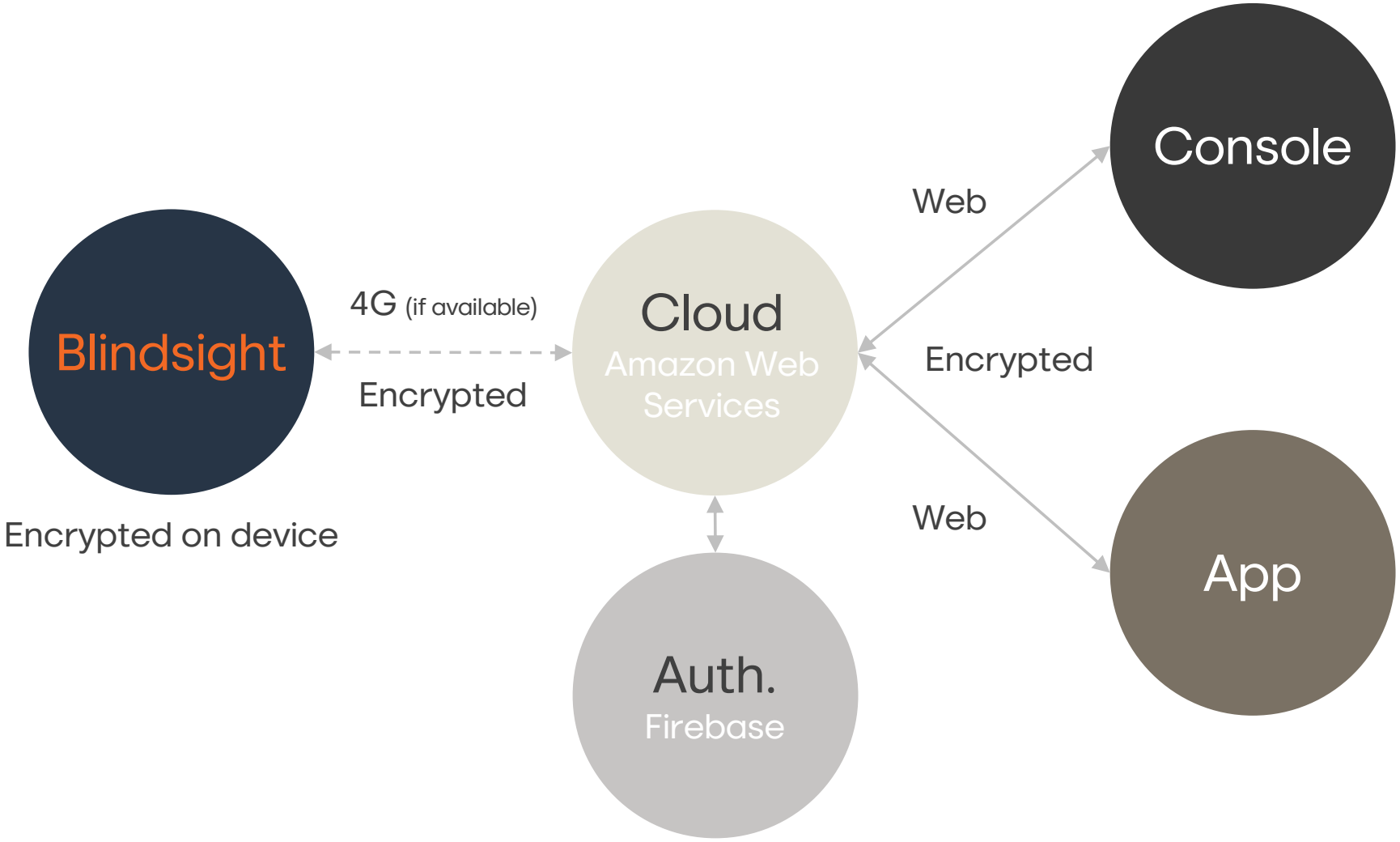
Mobile app

Configure devices and view detection images, video, and data

Cloud

Web-based console for user and device management, D&A, and automated reporting

Blindsight simplified system architecture



SELECTED USE CASES

3

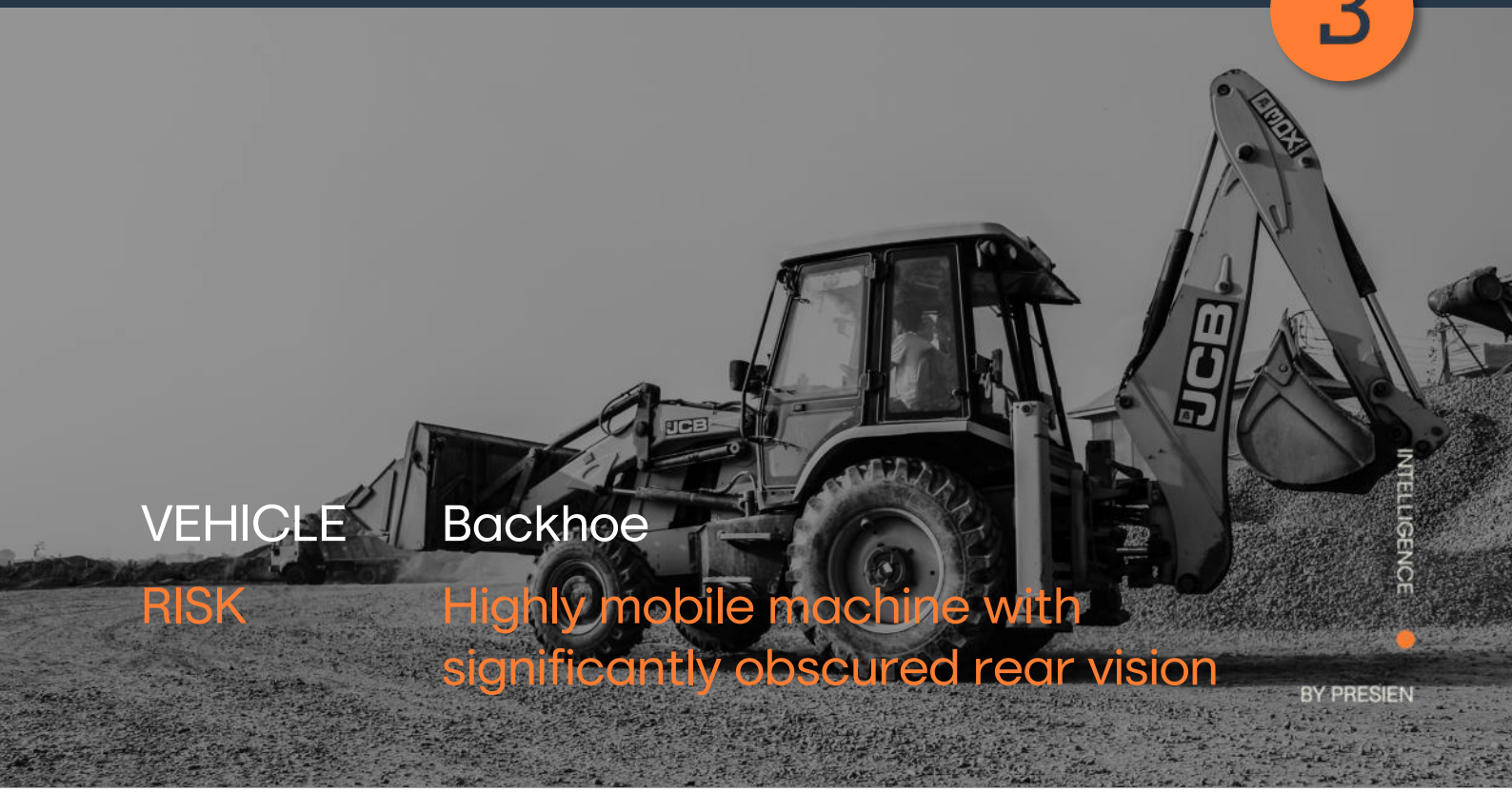
INTELLIGENCE

BY PRESIEN

BLIND SIGHT

MOBILE USE CASE

3



VEHICLE Backhoe

RISK Highly mobile machine with significantly obscured rear vision

Operators and site health and safety were concerned of potential plant-people interaction at the backhoe's rear blind spot due to the quick and varied forwards and backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zone. The in-cab alert was installed in the operator's peripheral vison.

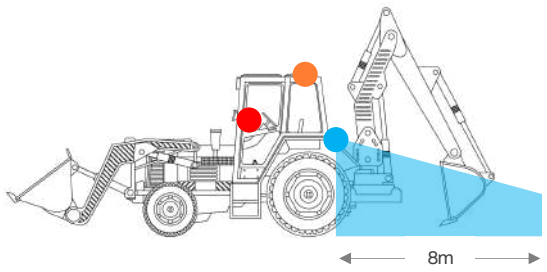
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

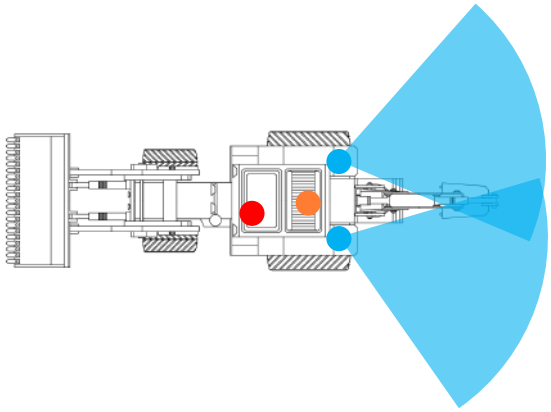
Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert



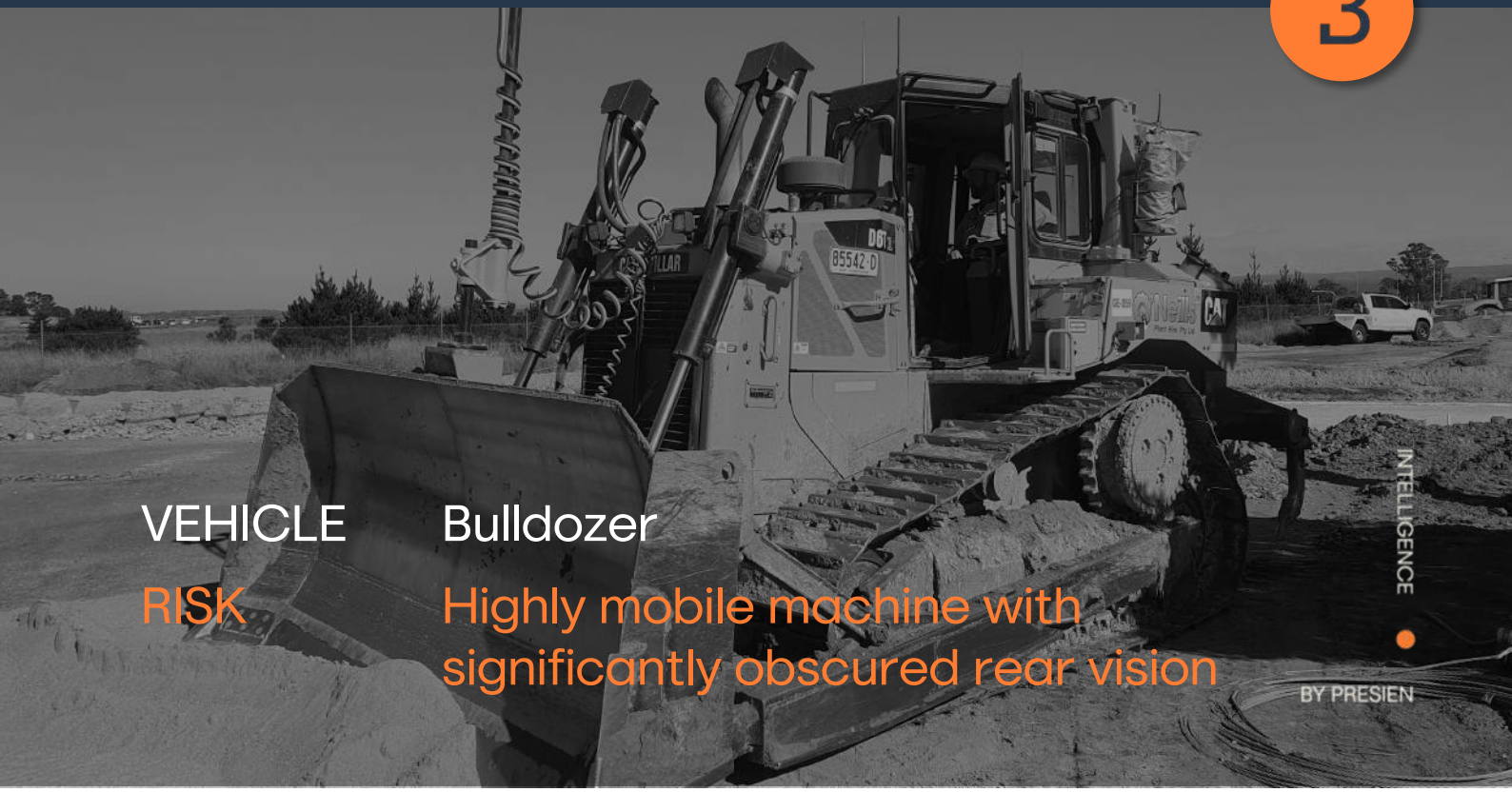


Hardware	1x Blindsight Processing Unit (BPU), 2x sensor with bolt mounts, 2x 5m cables, 1x in-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and to limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3



VEHICLE Bulldozer

RISK Highly mobile machine with significantly obscured rear vision

Operators and site health and safety were concerned of potential plant-people interaction at the bulldozer's rear blind spot due to the quick and varied forwards and backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zone. The in-cab alert was installed in the operator's peripheral vison.

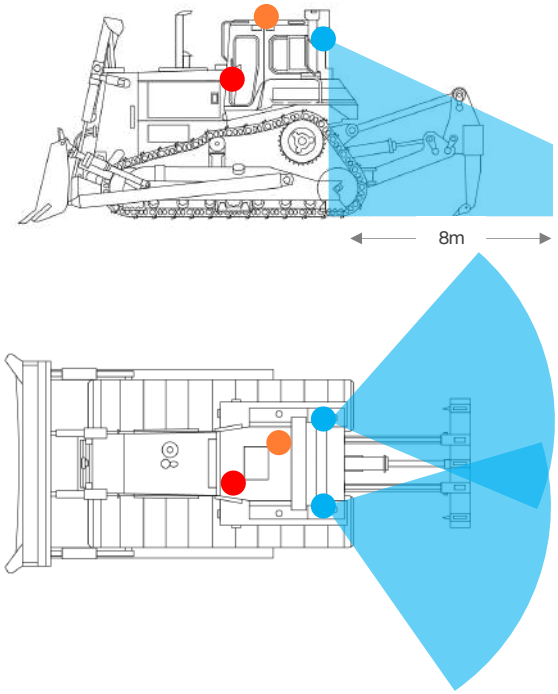
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert



Hardware	1x Blindsight Processing Unit (BPU), 2x sensor with bolt mounts, 2x 5m cables, 1x in-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and to limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Drum roller

RISK People entering hazard zones at the back of the machine

Operators and site health and safety were concerned of potential plant-people and plant-plant interaction at the roller's rear blind spot due to the quick and varied forwards and backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zones. The in-cab alert was installed in the operator's peripheral vison.

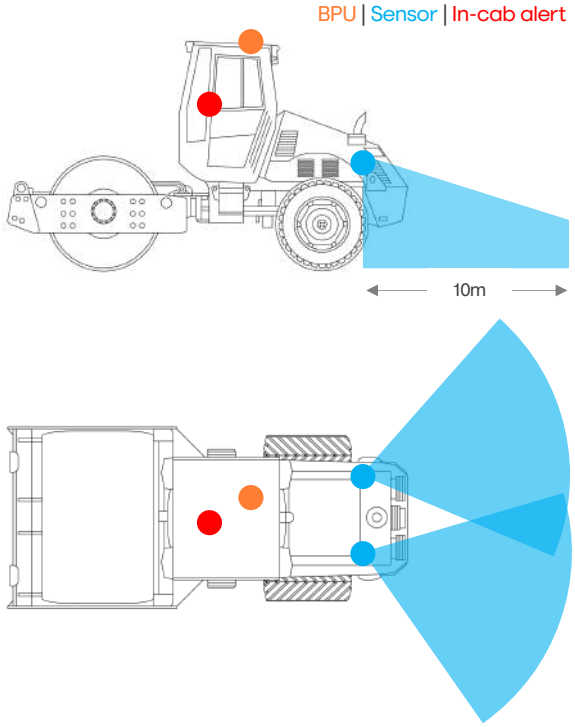
When Blindsight detects a person or a vehicle, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert

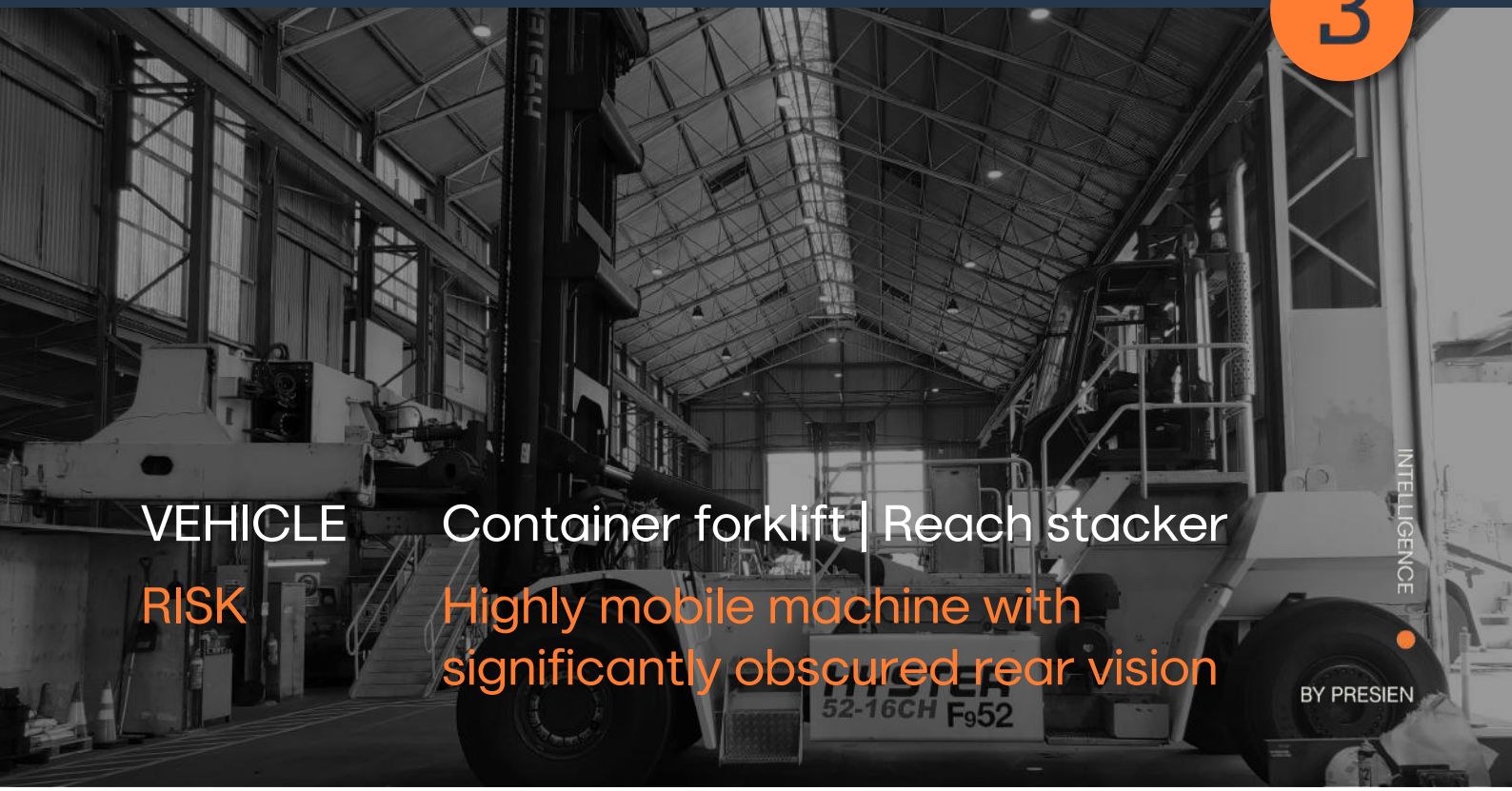


Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mount, 2x 5m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3



VEHICLE Container forklift | Reach stacker

RISK Highly mobile machine with significantly obscured rear vision

Operators and site health and safety were concerned of potential plant-people interaction at the forklift's rear blind spot due to the quick and varied forwards and backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zone. The in-cab alert was installed in the operator's peripheral vison.

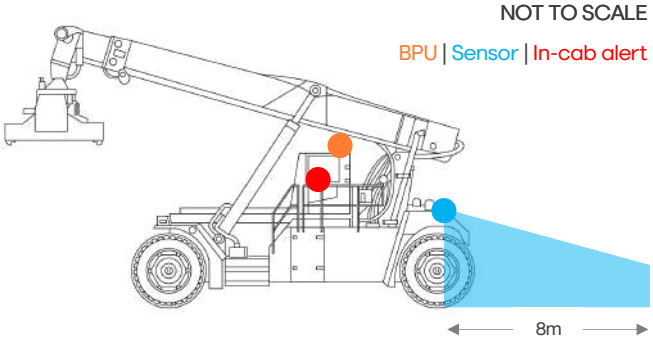
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

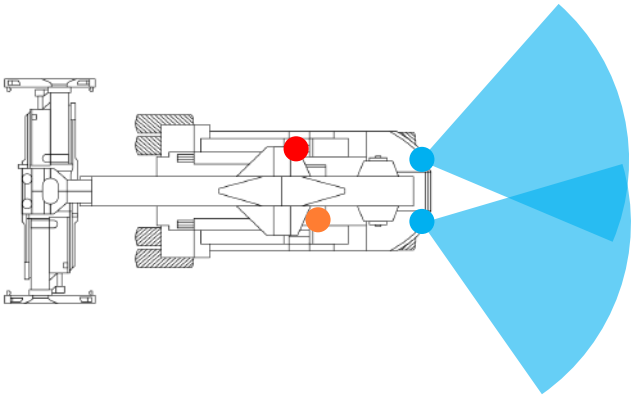
Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert





Hardware	1x Blindsight Processing Unit (BPU), 2x sensor with bolt mounts, 2x 5m cables, 1x in-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and to limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Elevated working platform

RISK People entering the drop zone directly beneath the basket

Operators and site health and safety were concerned of potential plant-people interaction as workers often cross under the platform without paying attention and the platform operator is unable to see directly below them.

Blindsight was fitted to the machine with both sensors observing this cross-traffic danger zone underneath the platform. The in-cab alert was installed in the operator's peripheral vison. A relay was connected to a flashing beacon that warns on-foot personnel they are too close.

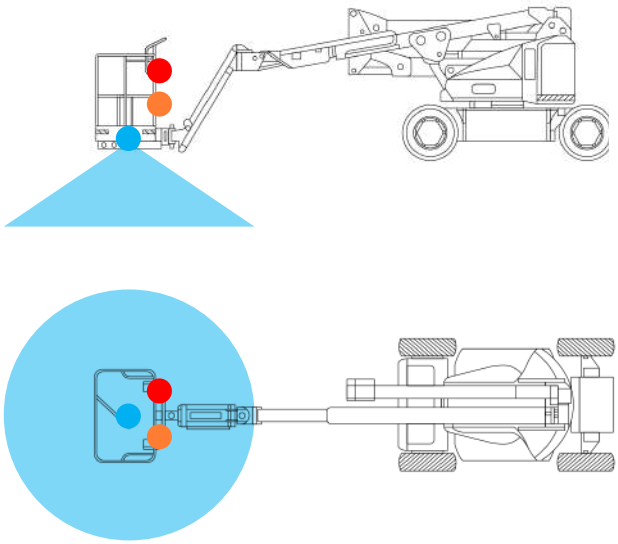
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert



Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with hose-clamp mounts, 2x 3m cables, 1x In-cab alert, 1x relay, 1x flashing beacon
Configuration	People detection on. Region of interest to mask out any visible sections of plant and to limit detection distance. Alerts enabled when dead-man switch disengaged. Relay set to beacon mode. Beacon fitted beneath platform.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Excavator (>10 t)

RISK Slewing plant without physical exclusion zones

Operators and site health and safety were concerned about people entering the exclusion zone around the excavator. The machine completely obscures the operator's vision in the rear and right side, creating a dangerous potential for people-plant interaction.

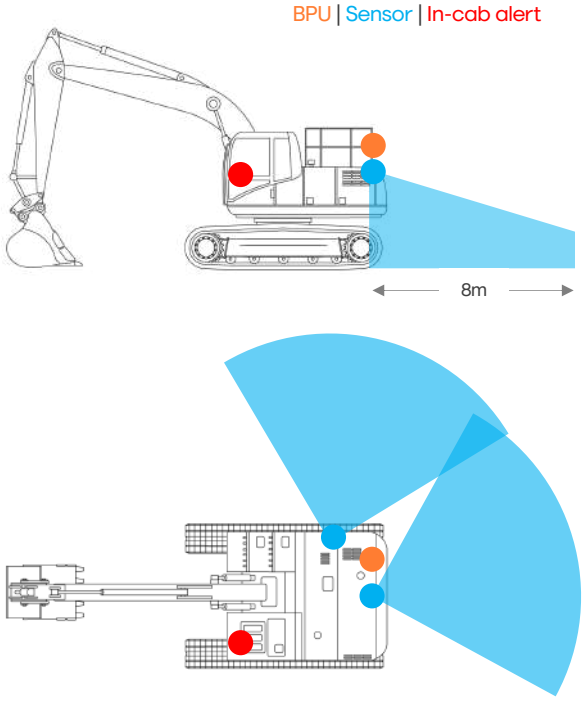
Blindsight was fitted to the machine with one sensor looking at each of these danger zones. The in-cab alert was installed in the cab at the operator's eye level. When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for review by health and safety.

As a result, the operator gained better situational awareness, personnel on foot had better success creating positive contact with the operator, and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert



Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with hose-clamp mount, 1x 5m cable, 1x 3m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and to limit detection distance. Alerts enabled when hydraulic safety lock/pilot lock has been disengaged.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Excavator (<10 t)

RISK People entering hazard zones at the back of the machine

INTELLIGENCE

BY PRESIEN

Operators and site health and safety were concerned of potential plant-people interaction due to crowded work environments and on-foot personnel dismissing this smaller, highly mobile vehicle as less of a threat.

Blindsight was fitted to the machine with both sensors observing this rear danger zone. The in-cab alert was installed in the operator's peripheral vison.

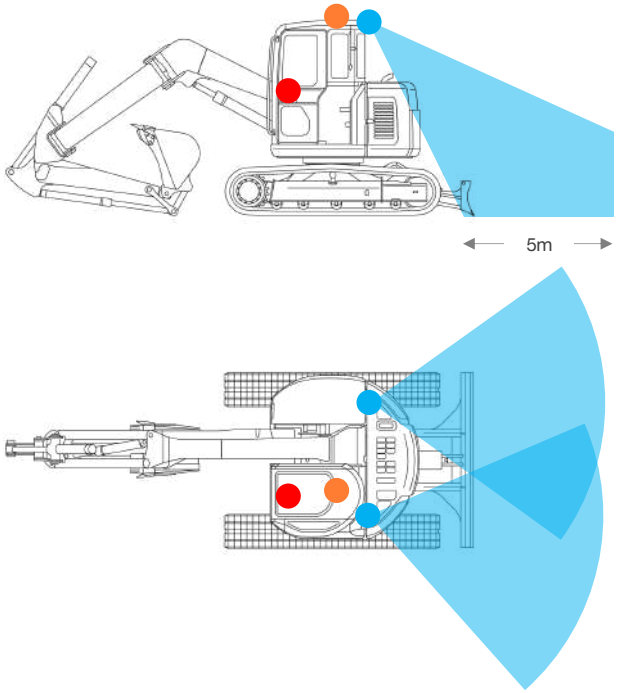
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert

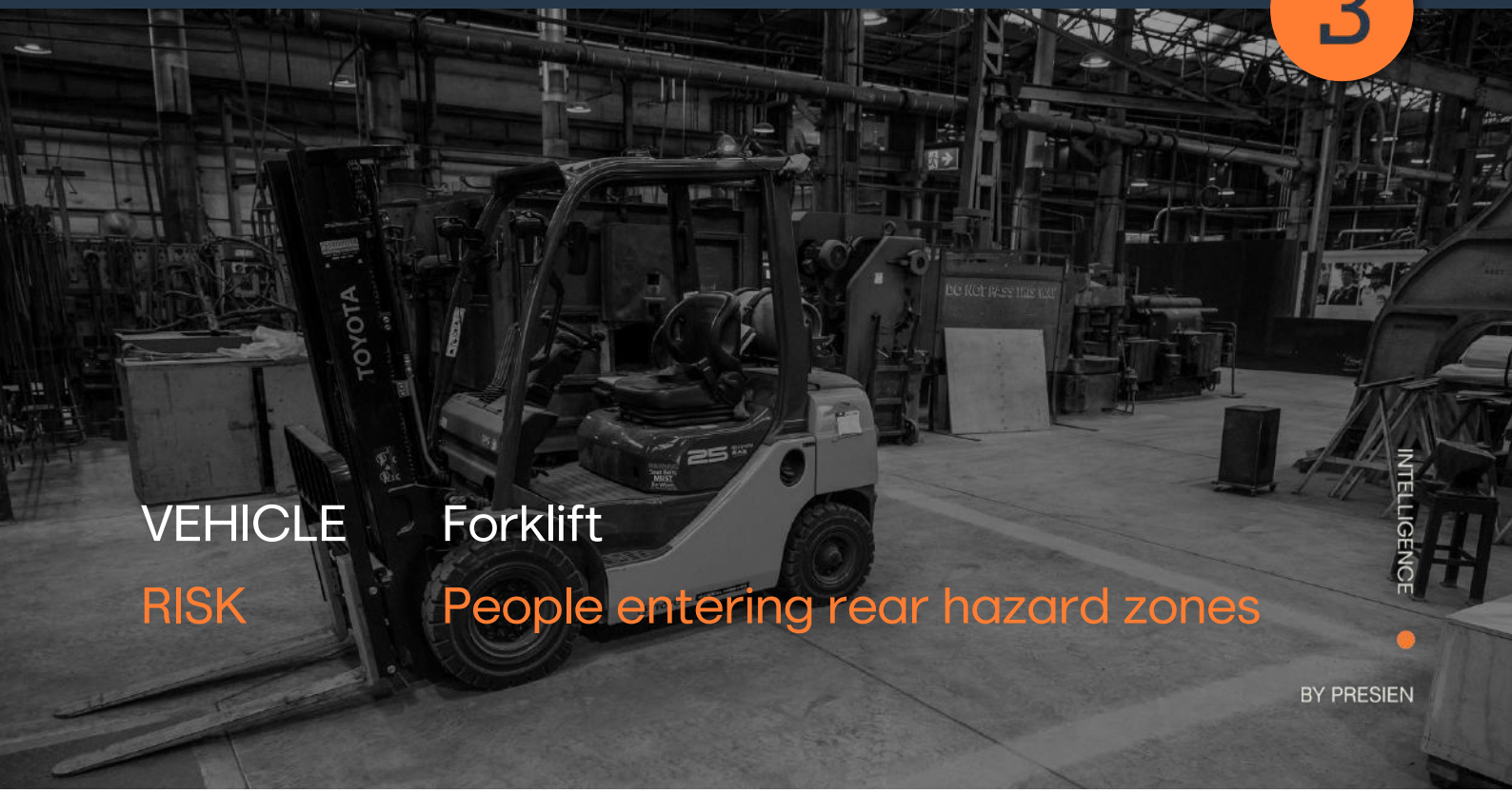


Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mount, 2x 3m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and limit detection distance. Alerts enabled when hydraulic safety lock/pilot lock has been disengaged.

BLIND SIGHT

MOBILE USE CASE

3



VEHICLE Forklift

RISK People entering rear hazard zones

Operators and site health and safety were concerned of potential plant-people interaction at the rear of the forklift, due to the quick and varied forwards and backwards operation.

Blindsight was fitted to the machine with both sensors observing the rear danger zones. The in-cab alert was installed in the operator's peripheral vison.

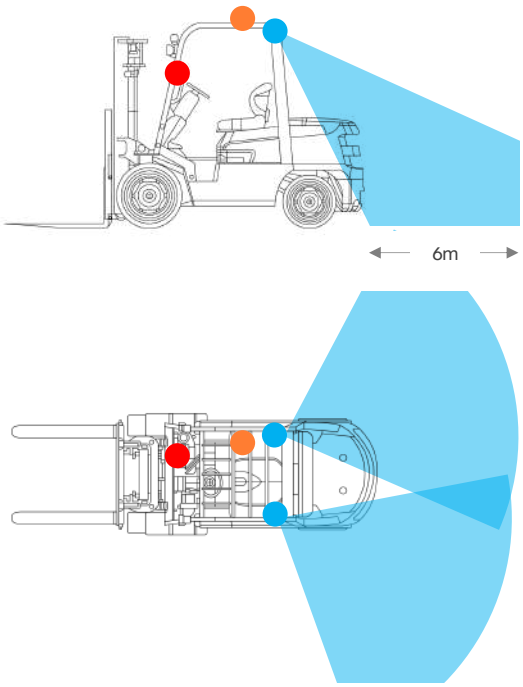
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights, vibration, and buzzer. Noise and vibration alerts ensure that the operator is alerted even when not facing the front.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert



Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mount, 2x 3m cable, 1x In-cab alert.
Configuration	People detection on. Alert zones to mask out any visible sections of plant and limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Grader

RISK People entering hazard zones at the back of the machine

Operators and site health and safety were concerned of potential plant-people interaction at the grader's rear blind spot due to the quick and frequent backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zone. The in-cab alert was installed in the operator's peripheral vison.

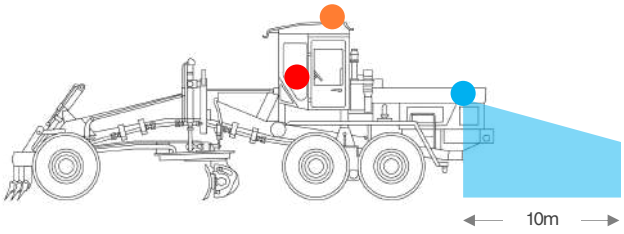
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

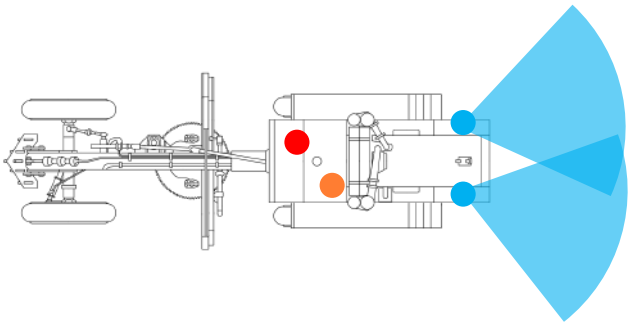
Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert





Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mount, 2x 10m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Grader

RISK People entering hazard zones at the front and back of the machine

Operators and site health and safety were concerned of potential plant-people interaction at the grader's rear blind spot but also identified the front as a blind spot due to the operator's focus on their blade during operations.

Blindsight was fitted to the machine with one sensor observing the rear danger zone and one sensor observing the front danger zone. The in-cab alert was installed in the operator's peripheral vison.

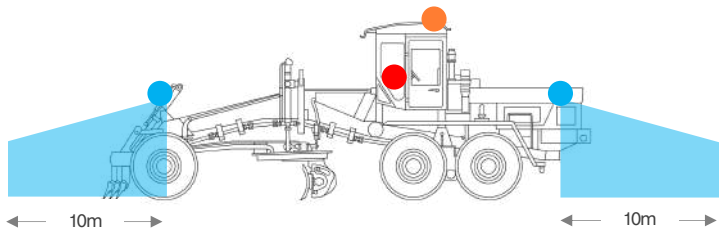
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

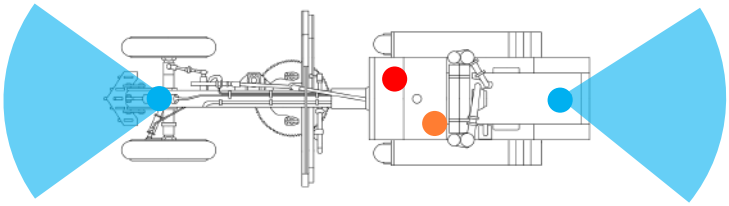
Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert





Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mount, 2x 10m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and limit detection distance.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Hydrema

RISK Highly mobile machine with significantly obscured rear vision

INTELLIGENCE BY PRESIEN

Operators and site health and safety were concerned of potential plant-people interaction at the truck's rear blind spot due to the quick and varied forwards and backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zone. The in-cab alert was installed in the operator's peripheral vison.

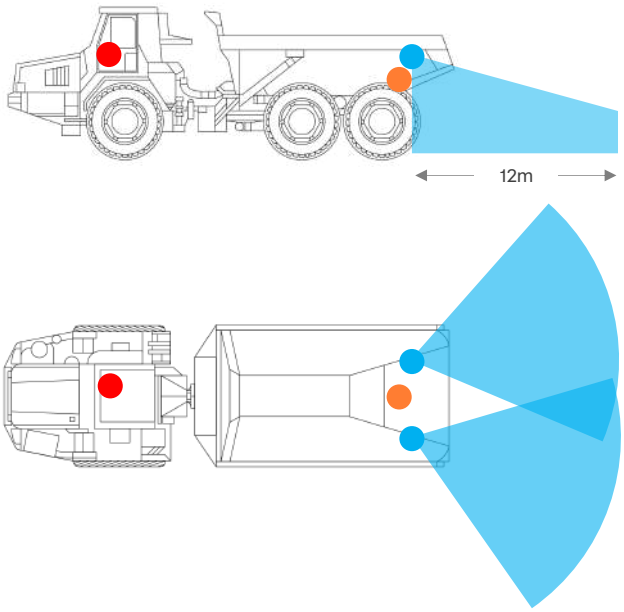
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert



Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mounts, 2x 3m cables, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and to limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Front end loader

RISK Highly mobile machine with significantly obscured rear vision

Operators and site health and safety were concerned of potential plant-people and plant-plant interaction at the loader's rear blind spot due to the quick and varied forwards and backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zones. The in-cab alert was installed in the operator's peripheral vison.

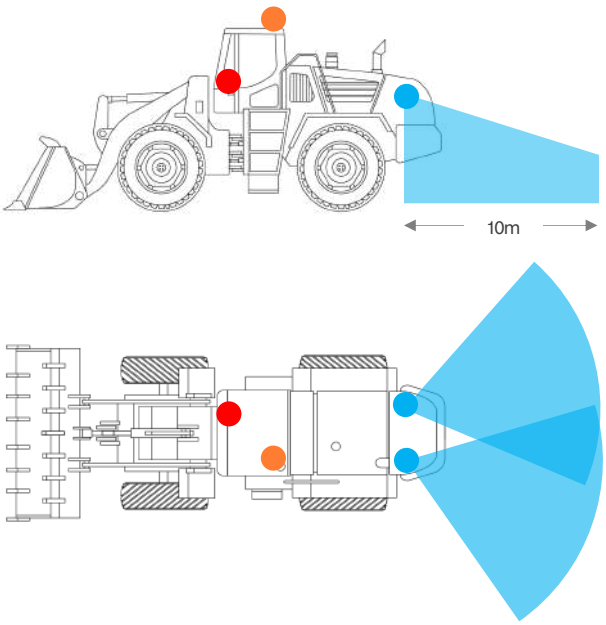
When Blindsight detects a person or a vehicle, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert

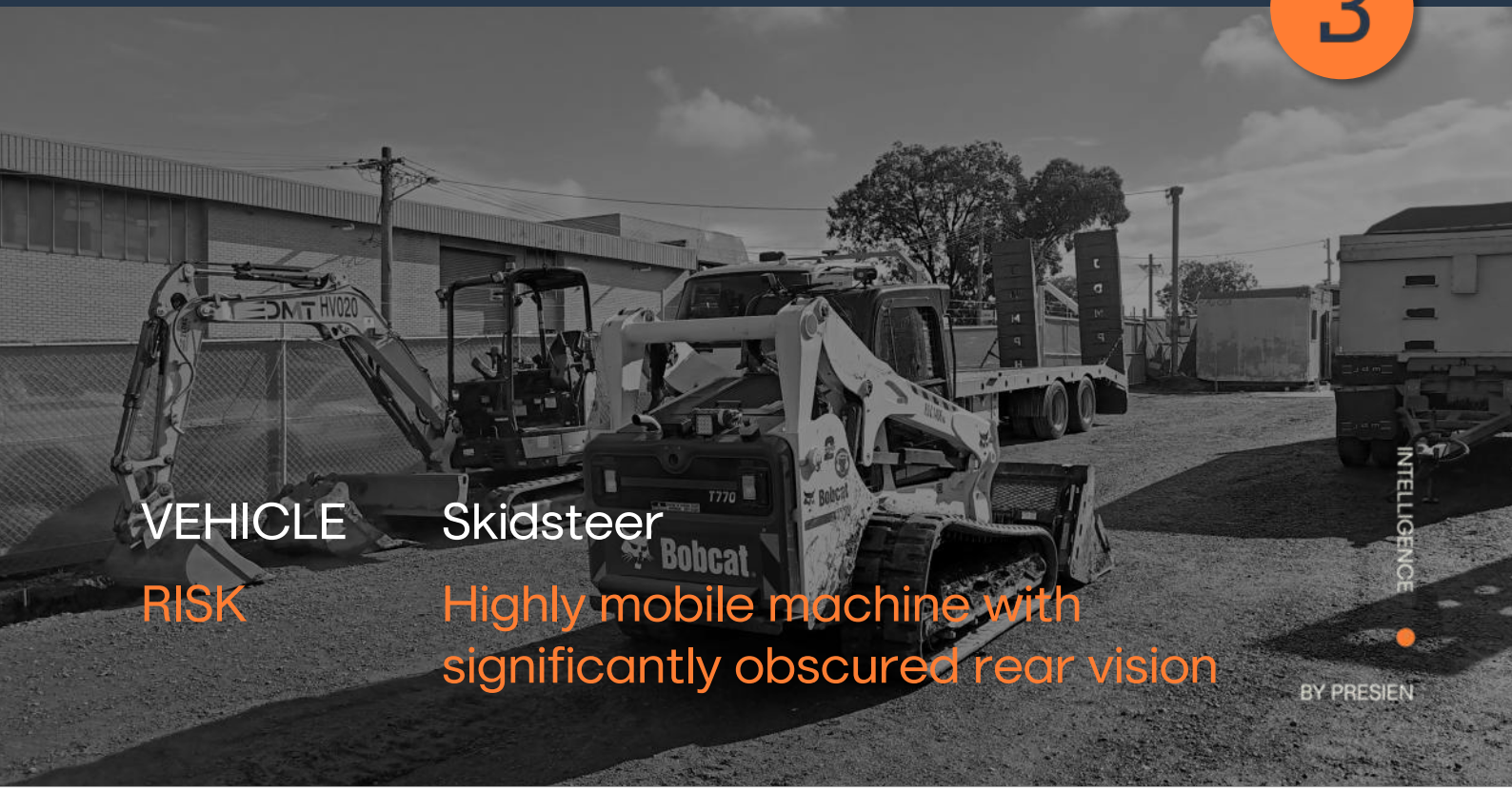


Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mount, 2x 5m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3



VEHICLE Skidsteer

RISK Highly mobile machine with significantly obscured rear vision

Operators and site health and safety were concerned of potential plant-people and plant-plant interaction at the skidsteer's rear blind spot, due to the quick and varied forwards and backwards operation of the vehicle.

Blindsight was fitted to the machine with both sensors observing this rear danger zones. The in-cab alert was installed in the operator's peripheral vison.

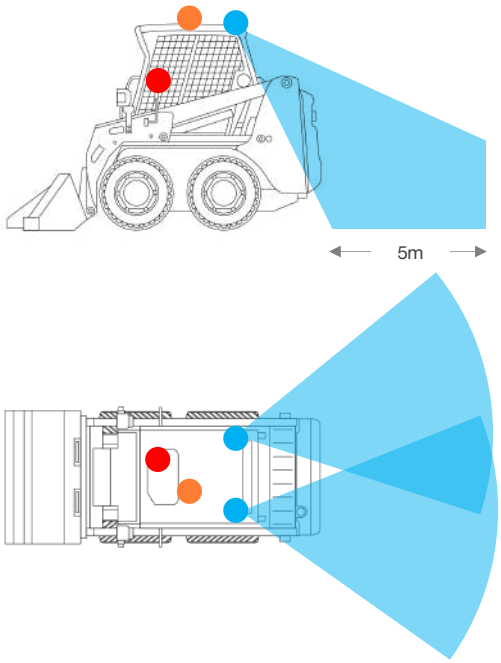
When Blindsight detects a person or a vehicle, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

Each detection event is saved, and a video is automatically uploaded to the cloud for analysis and review by health and safety.

As a result, the operator gained better situational awareness and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert



Hardware	1x Blindsight Processing Unit (BPU), 2x sensor with magnet mount, 2x 5m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and limit detection distance. Alerts enabled when vehicle is in reverse.

BLIND SIGHT

MOBILE USE CASE

3

VEHICLE Telehandler

RISK Highly mobile machine with significantly obscured rear and right vision

Operators and site health and safety were concerned about the telehandler's close quarter proximity to on-foot personnel. When loaded, the boom arm completely obscures the operator's vision on the right side, creating a dangerous potential for people-plant interaction.

Blindsight was fitted to the machine with one sensor looking at each of these danger zones. The in-cab alert was installed in the cab at the operator's eye level.

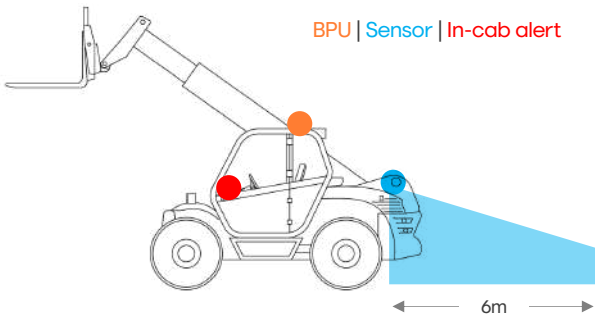
When Blindsight detects a person, the operator is alerted to the direction of the danger by the in-cab alert with flashing lights and an optional beeping or vibration noise.

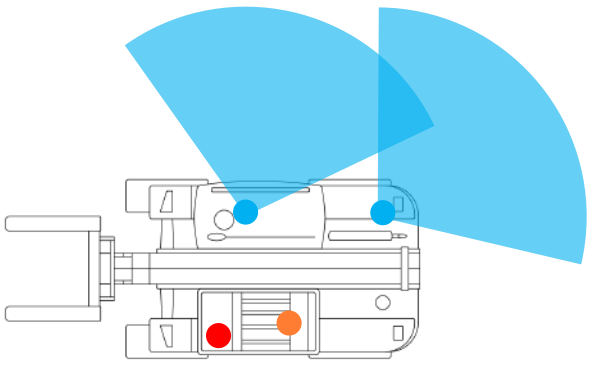
Each detection event is saved, and a video is automatically uploaded to the cloud for review by health and safety.

As a result, the operator gained better situational awareness, and health and safety was able to report on potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | In-cab alert





Hardware	1x Blindsight Processing Unit (BPU), 2x Sensor with bolt mount, 1x 10m cable, 1x 5m cable, 1x In-cab alert.
Configuration	People detection on. Region of interest to mask out any visible sections of plant and to limit detection distance.

BLIND SIGHT

FIXED USE CASE

3

LOCATION Intermittent exclusion zone

RISK People inside tipping area during truck load/unload

Site health and safety were concerned about a pedestrian accessible tipping area during truck load/unload operations. A permanent but intermittent exclusion zone was required.

Blindsight was installed with a sensor on two light towers, with the sensors looking at the exclusion zone. A relay with beacon light was installed at each worker entrance.

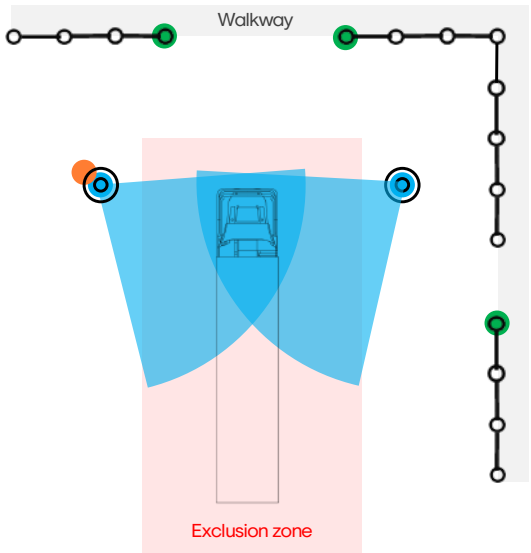
When Blindsight detects a vehicle in the loading area, the relays trigger the beacon lights to alert workers to not enter the area.

Detection data, including video, is automatically uploaded to the cloud for review by health and safety.

As a result, workers know when a truck was in the loading area and site health and safety could report on the number of trucks, exclusion zone breaches, and potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | Relay



Hardware	1x Blindsight Processing Unit (BPU), 2x sensor with magnetic mount, 2x 10m cable, 3x relay, 3x beacon light.
Configuration	Vehicle detection on. Region of interest to only observe the tipping exclusion zone(s). Relays configured to beacon program.

BLIND SIGHT

FIXED USE CASE

3

LOCATION Front gate of site compound

RISK People on the footpath as vehicles enter and exit

Site health and safety were concerned about a busy footpath situated between a school and a hospital that crossed directly in front of a busy entry/exit gate of a work site.

Blindsight was installed at the gate with sensors on fence posts looking in opposite directions down the footpath. The relay was mounted on the existing stop sign with a light attached.

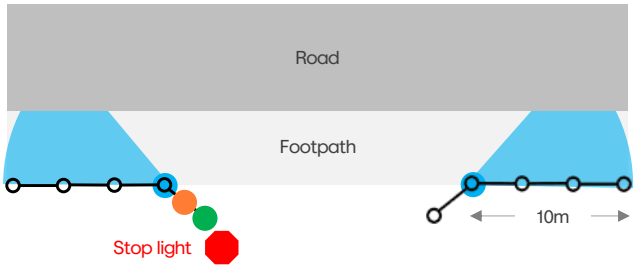
When Blindsight detects a person, the relay turns on the flashing light to alert drivers exiting the compound that there are people on foot and to exercise caution.

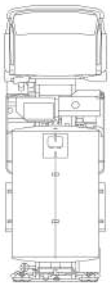
Detection data, including video, is automatically uploaded to the cloud for review by health and safety.

As a result, delivery and site drivers gained more situational awareness when leaving the compound and site health and safety could report on the number of footpath users and potential near misses.

Recommended installation
NOT TO SCALE

BPU | Sensor | Relay





Hardware	1x Blindsight Processing Unit (BPU), 2x sensor with hose-clamp mount, 1x 10m cable, 1x 5m cable, 1x relay, 1x beacon light.
Configuration	People detection on. Region of interest to only observe footpath. Relay configured to beacon program. Beacon light mounted near stop sign.

FEATURES

3

INTELLIGENCE

BY PRESIEN

	Advanced	Enterprise
AI and configuration		
Objects	People Vehicles Traffic cones	People Vehicles Traffic cones Custom (coming soon)
Alert Zone	Yes	Yes
Distance	Critical zone	Critical zone
Geo alerts	Geo anchored	Geo anchored
Alert trigger	Yes	Yes
Control		
Mobile app (iOS and Android)	Yes	Yes
Management console	Yes	Yes
User accounts	Unlimited	Unlimited

	Advanced	Enterprise
Alerts and data logging		
Alert customisation (colour, intensity, volume)	Yes	Yes
Detection logging	Metadata Image ~30 second video on demand	Metadata Image ~30 second video on demand
Notifications	Push (coming soon)	Push (coming soon)
Integrations		
No code rules builder	-	Yes (coming soon)
Automations	-	Yes (coming soon)
Single sign on	-	Yes (coming soon)
Support and services		
Over-the-air updates	Yes	Yes
Subscription pause	-	Yes (coming soon)
Support	Online In-app	Online In-app

Data and analytics

	Advanced	Enterprise
Data download	Yes	Yes
Raw data feed (via API)	-	Yes (coming soon)
Reports and visualisations	**Safety reports** • Detections • Near misses (coming soon) • Detection location (heat map) • Previous period comparisons **Vehicle and commercial reports** (coming soon) • Location • Time on site • Emissions (with linked database) • Operating hours • Idle time • Velocity	**Safety reports** • Detections • Near misses (coming soon) • Detection location (heat map) • Previous period comparisons **Vehicle and commercial reports** (coming soon) • Location • Time on site • Emissions (with linked database) • Operating hours • Idle time • Velocity **Additional** (coming soon) • Group comparisons • Custom reports

FREQUENTLY ASKED QUESTIONS

3

INTELLIGENCE

BY PRESIEN

Blindsight general

How far does Blindsight see?

Blindsight is designed to see roughly 10m, but it depends on the object and visibility.

Small objects, such as traffic cones, may be seen out to 10m; large objects, such as heavy vehicles, can potentially be seen hundreds of metres away.

Objects that are partially occluded and environmental conditions such as darkness and fog also impact detection distance.

Can Blindsight see in the dark/dust/light?

Blindsight is a vision-based system and must be able to see the object. Darkness and dust reduce the detection distance. Bright lights can also reduce detection distance.

Bright and dark together are the biggest challenge for vision systems because the optics do not know whether to try and focus on the dark (making the light area white) or light (making the dark area black) area.

How does Blindsight differentiate a near-miss?

Blindsight has alert zones and critical zones.

- **Alert zones** The areas that will generate alerts if the select object, such as people, enters. The alert zone distance depends on the vehicle and operations but is typically out to 6-10m.
- **Critical zones** Critical zones are a subregion of alert zones and will tag any detection as a critical alert, also known as a near-miss. The critical zone distance depends on the vehicle and operations but is typically out to 2-3m.

Blindsight subscription

Does Blindsight require a subscription?

Yes. Blindsight will not operate without a subscription.

Can a subscription be paused?

This feature is under development for the Enterprise subscription plan.

Is the subscription per device?

Yes. The subscription is per device.

Blindsight installation

How long does it take to install Blindsight?

Vehicle
4 hours/half a day, depending on vehicle. Some vehicles may take longer. The key time consuming steps are 1) determining component locations; 2) installing a plant power line(s); 3) routing cabling; and 4) creating appropriate alert zones.

Fixed infrastructure
1 hour, depending on power availability.

Does Blindsight damage vehicles?

No. Blindsight installation (and removal) generally does not damage the vehicle.

Can Blindsight be removed?

Yes. Blindsight can be removed (and reinstalled elsewhere), generally without damage.

Can customers install Blindsight?

Currently no. Blindsight should only be installed by trained and certified Blindsight installers.

However, trained users can often install the Blindsight Processing Kit if an installer has done the Blindsight Installation Kit.

Does Blindsight have a ‘wiring kit’ to make a vehicle Blindsight enabled?

Yes. Blindsight can be supplied in two parts: as a Blindsight Installation Kit and Blindsight Processing Kit. The Installation Kit makes a vehicle Blindsight enabled. It requires certified installers and takes roughly ¾ the time of a full installation.

How is Blindsight configured?

Blindsight is configured using an app, available on the Apple and Google app stores. The app is not required after initial configuration.

Blindsight use

Does Blindsight control a vehicle?

No. Blindsight alerts operators to the risk but does not shut down a vehicle or take control.

Does Blindsight require wifi or 4G?

No. 4G is not required for detections and alerts. Blindsight does not require wifi.

Blindsight only requires 4G for initial configuration and data in/out.

Does an operator need a phone and app?

No. Operators do not require the control app. The app is only required for initial Blindsight configuration.

Blindsight operation and maintenance

Will Blindsight drain the vehicle battery?

No. Blindsight automatically turns on and off with the vehicle, provided that the power is sourced from vehicle switched ignition.

How do I change the alerts?

The In-cab alert has integrated LED, vibration, and buzzer. The behaviour on person detection (or other object) can be configured with the app or buttons on the side of the alert. The Relay behaviour on person detection (or other object) can be configured with the app.

What maintenance is required?

Blindsight does not require any special maintenance. A regular check during pre-start is all that is required to ensure that the sensors remain 'looking' at the desired area(s) and Blindsight is functioning.

All external Blindsight hardware can be pressure washed as part of normal vehicle cleaning.

How do I know if Blindsight is working?

Blindsight automatically turns on and off with the vehicle. Operators can confirm that Blindsight is working by walking into the alert zones during normal pre-start checks.

Blindsight will alert the operator with a red status light if it cannot 'see'.

Blindsight security

Who owns Blindsight data?
The user (or user's organisation) owns their Blindsight data.

Who can see Blindsight data?
The user (or user's organisation) controls who has access to Blindsight data using the management console. Users can be added, removed, or permissions changed, at any time.

Can I manage users and permissions?
Yes. Users (and Blindsight systems) can be managed in the console.

Can I see who made changes?
Yes. Blindsight logs what and when changes were made, and who made the changes.

Is Blindsight always recording?
Yes. Blindsight always records, in order to provide the pre-detection videos (i.e. what happened in the 10 seconds before detection).

Can recording be turned off?
No. Blindsight is a safety system and the recording is part of the audit data. However, video is not seen by a human unless deliberately requested and video stored on a Blindsight system is automatically overwritten after ~7 days unless requested.

Can I delete a detection video?
Normal users cannot delete detection videos once in the cloud. This is to ensure that detection videos used in potential health and safety incidents cannot be deleted.

However, a video must be manually requested from the device. A video that is not requested will be automatically overwritten and lost after roughly 7 days.

Who provides the cloud infrastructure and where are the servers?

Blindsight uses Amazon Web Services (AWS) cloud infrastructure. The servers are located in Sydney, Australia.

Is Blindsight data backed up?

Yes. Blindsight data in the cloud is backed up.

Is Blindsight encrypted?

Yes. Blindsight data is stored locally on the device encrypted and all communications links are encrypted.

Why are there no passwords?

Blindsight uses a token-based security system that does not require passwords. Blindsight uses Firebase, a Google company, to provide and manage this system.

INTELLIGENCE

BY PRESIEN

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