- Autonomous Warehouse Automation
- Autonomous Mobile Robots
- EV Electrification Conversions
- Humanoid Industrial Automation

PLAN B



PLAN B ENGINEERING SOLUTIONS

AUTONOMOUS ROBOTIC SOLUTIONS
EV ELECTRIFICATIONS
AI-POWERED INDUSTRIAL SAFETY

Works :#31A/22, North Phase, 4th Cross Street, SIDCO Industrial Estate,
Ambattur, Chennai - 600 098, Tamil Nadu, India. www.planbengineering.solutions

PLAN B ENGINEERING SOLUTIONS · INDUSTRIAL SAFETY

Forklift Safety System

AI 360° camera vision plus Plan B Wireless System proximity warning — two layers of protection for people and vehicles in your warehouse.

- Pedestrian detection
- Vehicle-to-vehicle alerts
- Auto speed limit



THE CHALLENGE

Blind spots in every aisle

Collisions happen where the driver cannot see — so the system must see and warn on the driver's behalf.

Blind rack ends

Racks and pallets block the view at aisle crossings — a forklift or worker appears with no warning.

Mixed traffic

Pedestrians and forklifts share the same aisles, docks and crossings on every shift.

Reversing & tall loads

Reversing moves and raised loads leave large zones around the truck that the driver cannot see.

OUR SOLUTION

Two layers of protection

LAYER 01 · SEE

AI 360° Camera System

Sees what the driver can't

- Four cameras give a full 360° view around the truck
- AI identifies pedestrians and vehicles — no tags needed
- Live view on the cab display with buzzer alerts

LAYER 02 · SENSE

Plan B Wireless System

Senses through racks and pallets

- UWB radio measures exact distance between trucks and tags
- Detects forklifts and workers behind racks and corners
- Alerts driver and worker together; can reduce speed

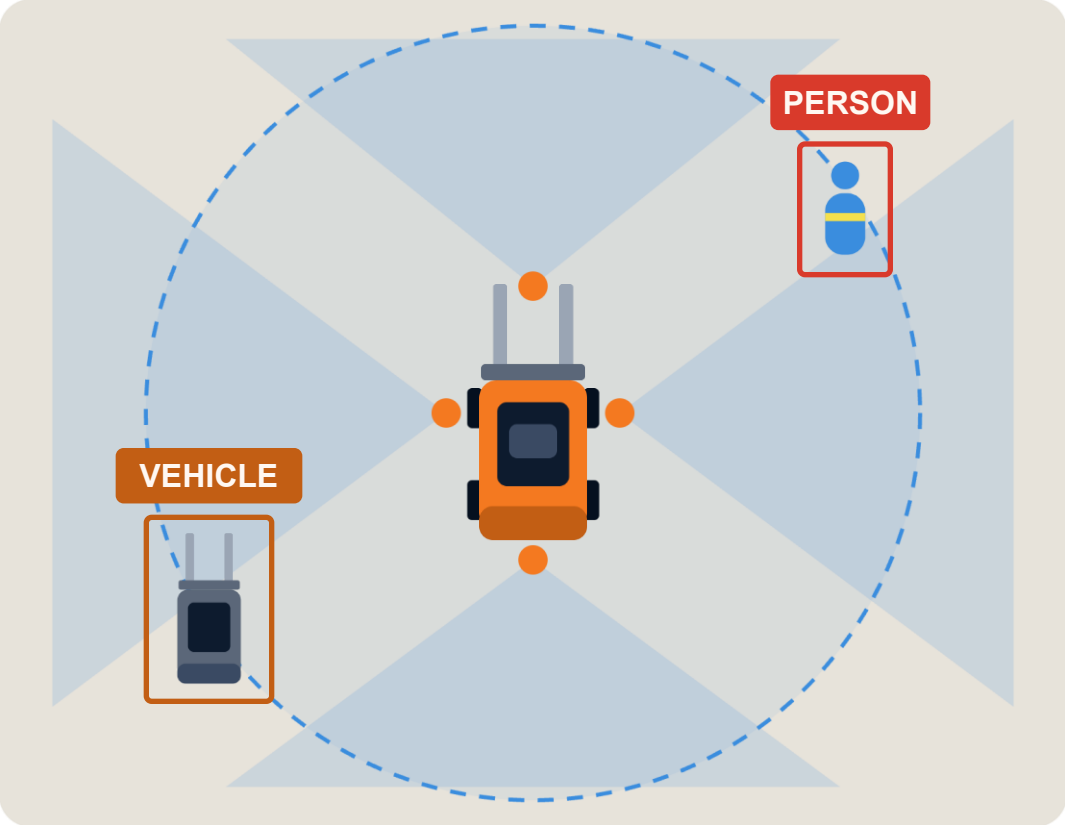
LAYER — 01 | SEE PACKAGE

AI-Enabled 360° Camera System



LAYER 01 · AI 360° CAMERA

Full view, smart detection



01 Capture

Four wide-angle cameras — front, rear, left, right — stitch a live 360° bird's-eye view.

02 Detect

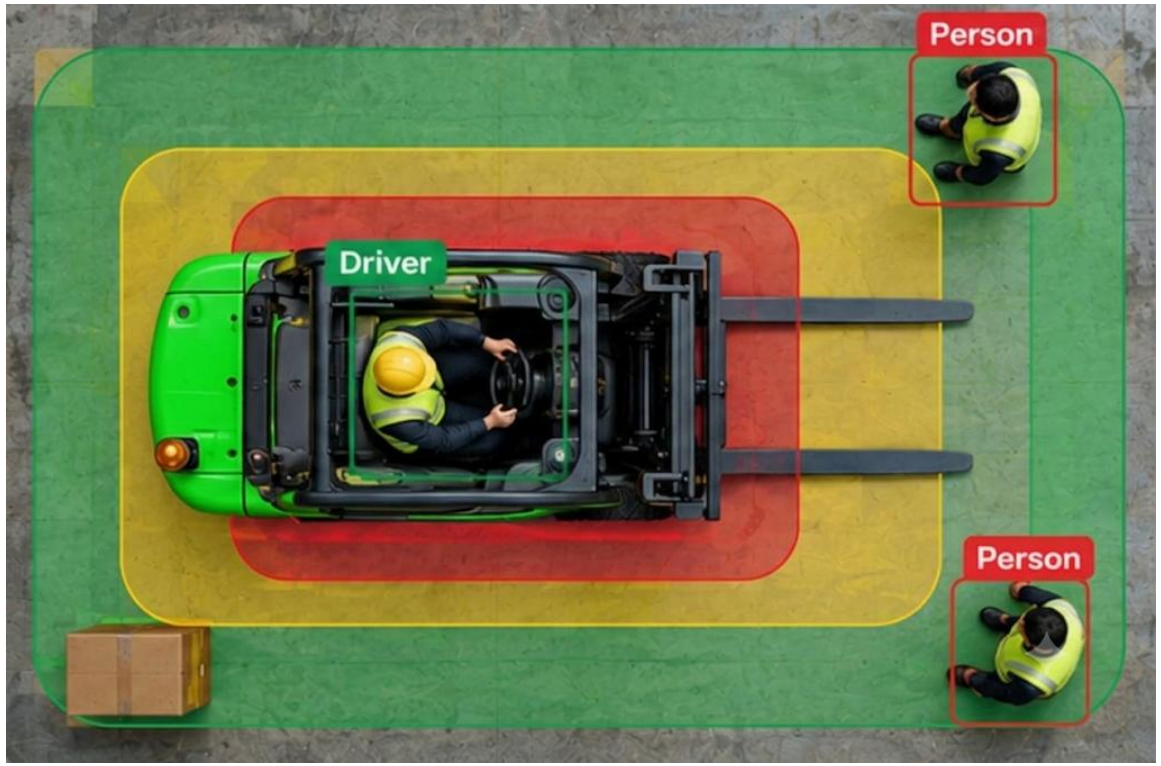
On-board AI classifies pedestrians and vehicles in real time — workers need no tag.

03 Alert

Detections are boxed on the cab display and the buzzer sounds by distance zone.

DRIVER DISPLAY & BUZZER

Alerts the driver reads in a glance



CLEAR · beyond [5 m]

Normal live view · buzzer silent

CAUTION · [2–5 m]

Yellow box on display · intermittent beep

DANGER · under [2 m]

Red flashing box · continuous buzzer

Zone distances are configurable per site and per truck.

LAYER 01 · CAMERA SPECIFICATION

AI 360° camera system details



Camera unit

Parameter	Specification
Quantity	4 per forklift — front, rear, left, right
Camera type	Automotive fisheye, GMSL2
Resolution	1920 × 1080 at 30 fps
Field of view	~190° H × ~150° V per camera
Low light	HDR sensor, ~0.1 lux class
Protection	IP67 / IP69K, vibration rated
Connector	FAKRA coaxial

AI unit, display & buzzer

Parameter	Specification
AI processor	Edge AI Vision ECU, Jetson Orin NX class
Detection	Pedestrians, vehicles, forklifts
Display	7“ or 10“, 1280 × 800, ≥ 1000 nit
Alert levels	3 — clear, caution, danger
Buzzer	85–95 dB, tone by zone
Recording	Event clips on local storage (optional)
Power	Forklift battery via DC-DC converter

Preliminary specifications — final values confirmed against the selected supplier's datasheet.

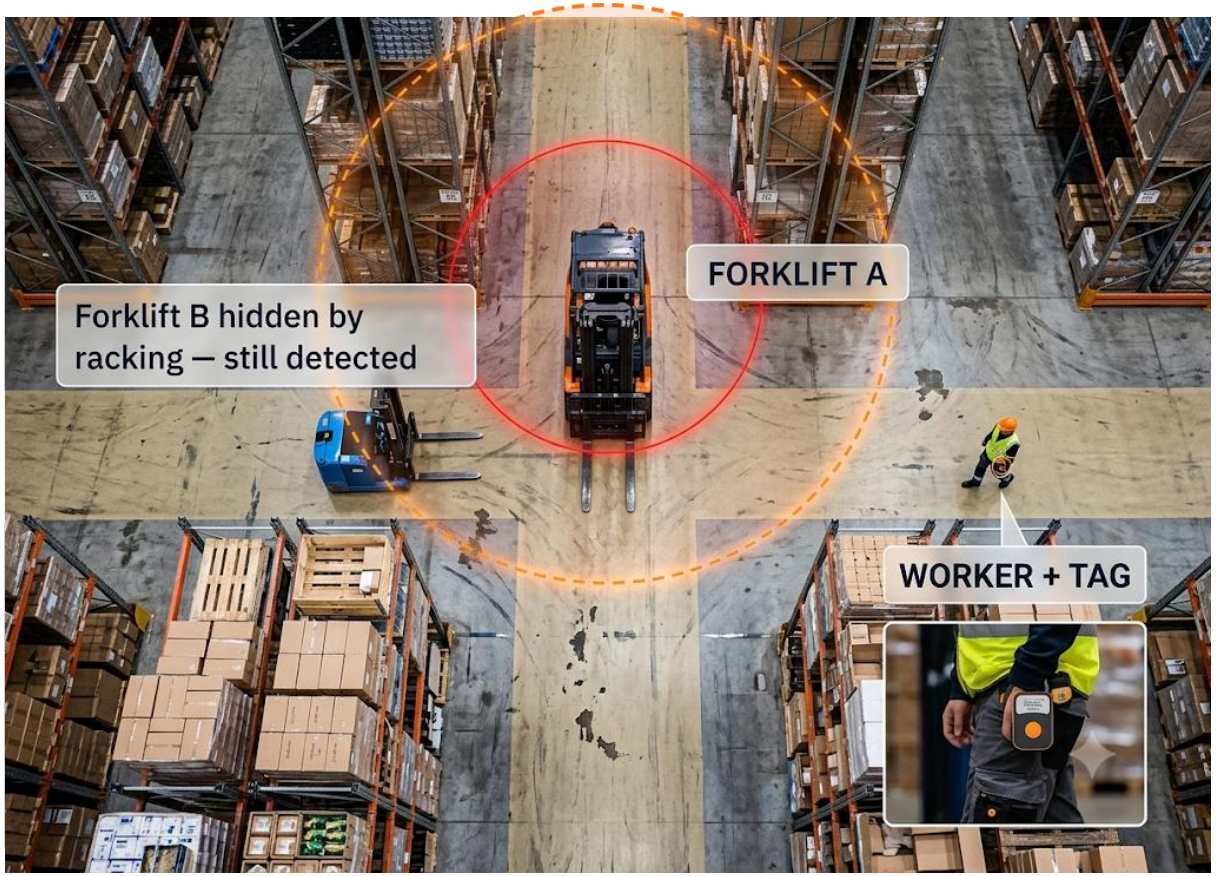
LAYER — 02 | SENSE PACKAGE

Plan B
Wireless System



LAYER 02 · PLAN B WIRELESS SYSTEM

Sees around corners with UWB radio



UWB radio, not line of sight

Measures exact distance between modules — works through racks, pallets and blind corners.

Two configurable zones

Warning and Protection zones — circle, rectangle or polygon, up to about 24 m around the truck.

Vehicles and pedestrians

Detects other equipped forklifts and every worker wearing a Plan B wireless tag.

Retrofit on any fleet

OEM-agnostic — fits existing forklifts of any make or age.

Plan B Wireless System · UWB proximity detection for people and vehicles

PLAN B WIRELESS SYSTEM · WHO GETS ALERTED

Driver and worker warned together

The driver

Cab unit sounds an alarm and lights up when a person or truck enters the zone.

The worker

The worker's wearable tag alarms too — they know a forklift is near before they see it.

The forklift

In the protection zone, truck speed is limited automatically to 5 km/h.

WARNING ZONE
Alert driver + worker

→

PROTECTION ZONE
Alarm + speed limit 5 km/h

→

ZONE CLEAR
Normal speed restored

LAYER 02 · SPECIFICATION

Plan B Wireless System



Vehicle module (per forklift)

Parameter	Specification
UWB band	3.2–6.8 GHz
Supply voltage	12–48 V DC (±10%)
Protection	IP65
Operating temp.	−25 °C to +60 °C
Outputs	2 relays (slow / stop) + 2 open-collector
Size / weight	120 × 125 × 35 mm, 500 g
Antenna module	IP65, 85 × 58 × 35 mm, 200 g

Worker tag & detection zones

Parameter	Specification
Tag alarm	90 dB acoustic + status LED
Tag protection	IP54
Tag size / weight	64 × 125 × 14 mm, 200 g
Tag battery	Rechargeable, 15 h and 20 h versions
Zones	Warning + Protection, fully configurable
Zone shapes	Circle, rectangle or polygon
Coverage	Up to ~24 m (80 ft) around the forklift

Preliminary specifications — final values confirmed at order.

ACTIVE INTERLOCK // SPEED-LIMIT OUTPUT

Automated Vehicle Speed Reduction

GOVERNED SPEED LIMIT

5 km/h

Truck controller limits to 5 km/h

Zone Breach Detection

AI camera or UWB sensor detects pedestrian proximity.

Speed-Limit Output Signal

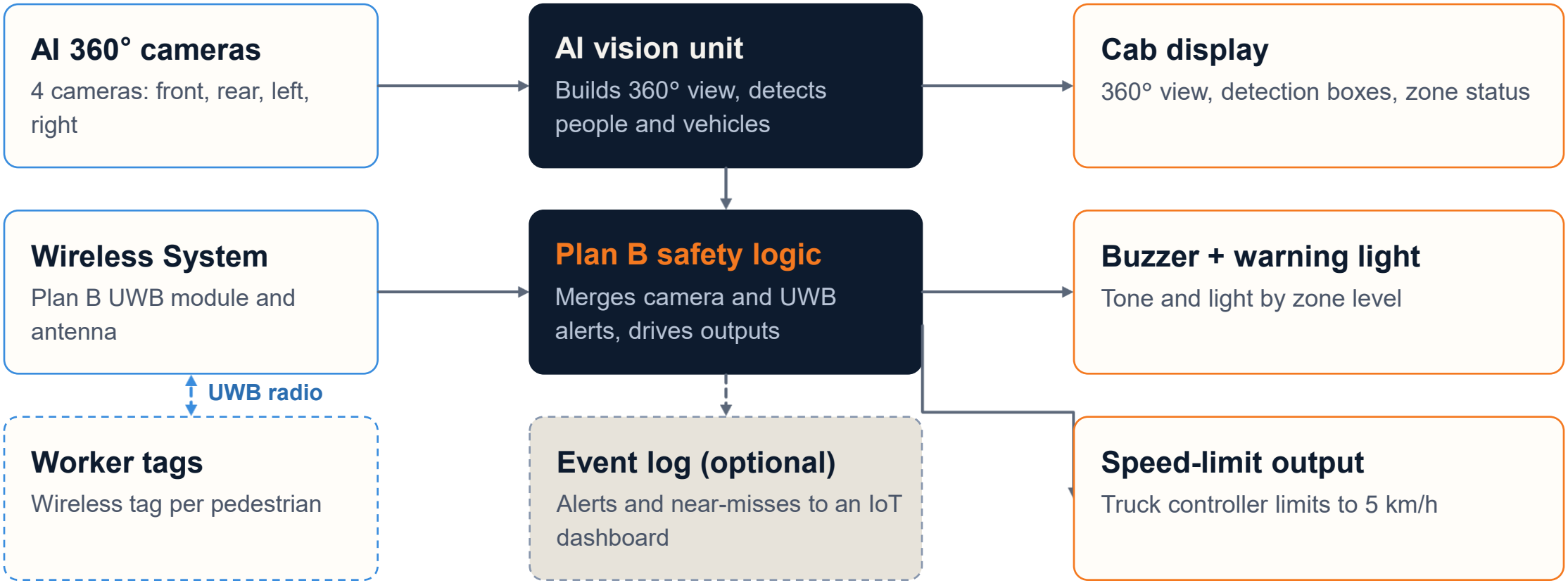
Relay output triggers vehicle speed-governor interface.

Controlled Creep Mode

Truck smoothly decelerates and caps travel at 5 km/h.

SYSTEM ARCHITECTURE

One integrated system per forklift





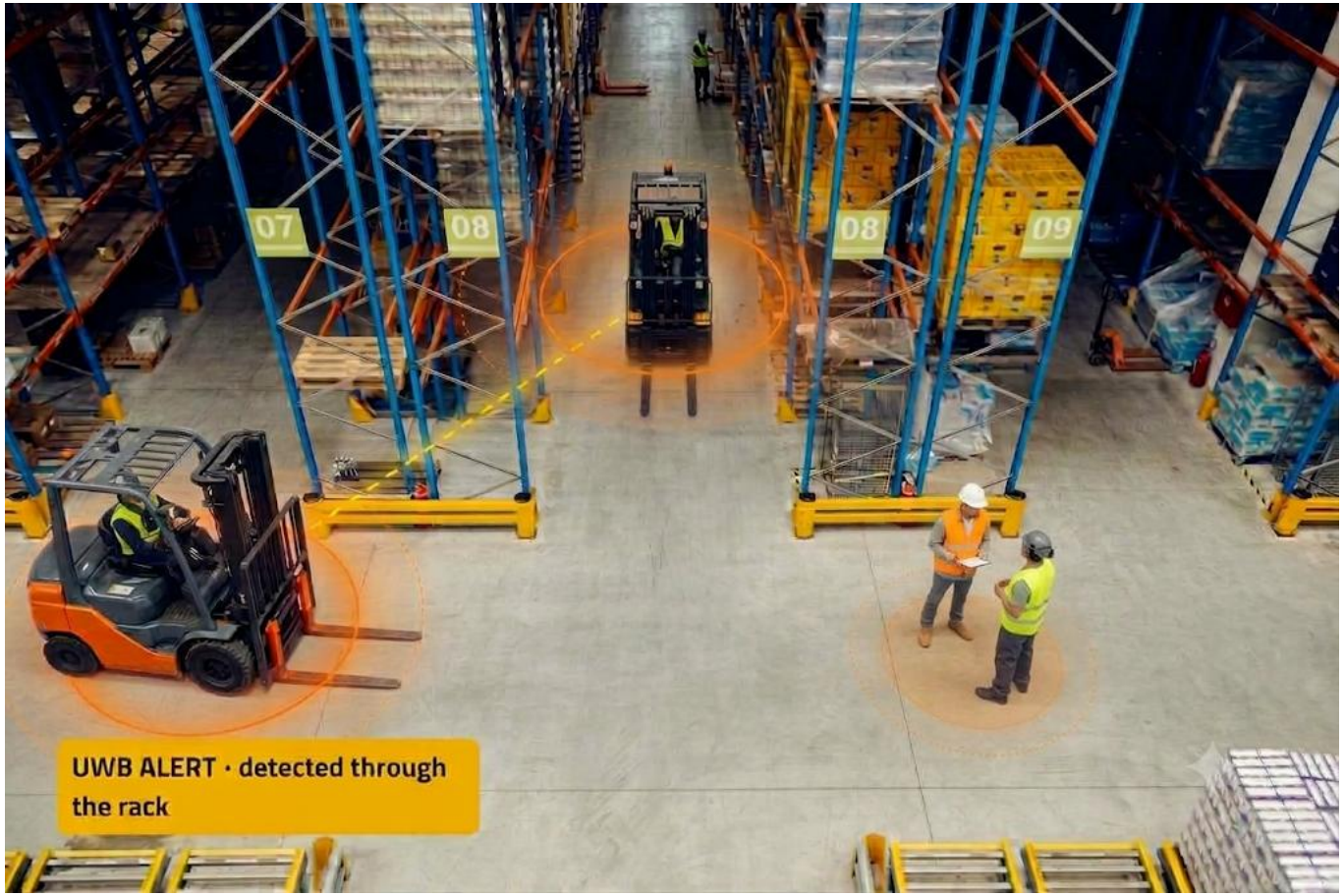
SCENARIO · BLIND RACK END

01

Approaching a blind rack end

Forklift A drives down the aisle. Forklift B is behind the racking — neither driver can see the other, and no camera has line of sight yet.

Hidden hazard · no warning yet



SCENARIO · BLIND RACK END

02

UWB senses through the rack

Forklift B enters A's warning zone. Plan B Wireless System alerts both drivers through the racking — before either truck is visible.

WARNING · both drivers alerted



SCENARIO · BLIND RACK END

03

Speed limited, camera confirms

In the protection zone A slows to 5 km/h. The 360° camera now sees B and the worker, boxing both on the display, and the buzzer sounds.

DANGER · slowed, safe to stop

WHY THIS SYSTEM

What your site gains

Tagless pedestrian detection
AI cameras protect visitors and workers even without a tag.

Sees through racks
UWB warns of hidden forklifts at blind ends and crossings.

Two-way alerts
Driver and worker are warned at the same moment.

Automatic speed control
Speed limited to 5 km/h inside the protection zone.

Fits your current fleet
Retrofit on existing forklifts of any make.

Data for safety reviews
Optional event log shows where near-misses happen.

SCOPE OF SUPPLY

What we install

Item	Quantity	Purpose
AI 360° camera kit + AI unit	1 per forklift	Pedestrian and vehicle detection
Cab display	1 per forklift	360° view and alert status
Buzzer + warning light	1 per forklift	Audible and visual alarm
Plan B Wireless vehicle module	1 per forklift	UWB vehicle and pedestrian proximity
Plan B Wireless worker tag	1 per pedestrian	Worker alert on the body
Speed-limit interface	1 per forklift	5 km/h limit in protection zone
Install, zone setup, training	Per site	Commissioning and handover

Fleet size: [__] forklifts · [__] pedestrians · final quantities confirmed after site survey.

INVESTMENT

Pricing per forklift

System	What it includes	Price
360° Camera System	4 AI cameras, AI vision unit, cab display, buzzer	**Contact – PLAN B OFFICE**
Plan B Wireless System	UWB vehicle module — alerts driver and worker	**Contact – PLAN B OFFICE**
Speed Limit System	Automatic 5 km/h limit in the protection zone	**Contact – PLAN B OFFICE**
Total — fully equipped forklift	**Camera + Wireless + Speed Limit**	**Contact – PLAN B OFFICE**

Prices in INR. Taxes, installation and payment terms as per commercial proposal. Final quote after site survey.

ROLLOUT PLAN

From survey to full fleet

1

Site survey

Map aisles, blind ends, crossings and traffic.

2

Pilot

Install on [1–2] forklifts and test in live shifts.

3

Zone tuning

Set zone distances, alert levels and speed limit.

4

Fleet rollout

Install across the fleet; forklift drivers and staff.

5

Support

Periodic review of alerts and system health.

LET US IN TOUCH WITH YOU

THIAGA RAJ S. V
Prop. | Head - Projects
M: +91 90426 20399
+91 86107 28542



PLAN B ENGINEERING SOLUTIONS

AUTONOMOUS ROBOTIC SOLUTIONS | EV ELECTRIFICATIONS
AI-POWERED INDUSTRIAL SAFETY

planbengineeringsolutions@gmail.com
planbchennai@gmail.com | www.planbengineering.solutions

Project Office: E.C07, 3rd Floor, Senate Space, W-126,
3rd Ave, Anna Nagar, Chennai - 600040, Tamil Nadu, India.

PRITHIVI RAJ S
Administrative Head
M: +91 86107 28542
+91 90426 20399



PLAN B ENGINEERING SOLUTIONS

AUTONOMOUS ROBOTIC SOLUTIONS | EV ELECTRIFICATIONS
AI-POWERED INDUSTRIAL SAFETY

planbchennai@gmail.com | www.planbengineering.solutions
planbengineeringsolutions@gmail.com

Project Office: E.C07, 3rd Floor, Senate Space, W-126,
3rd Ave, Anna Nagar, Chennai - 600040, Tamil Nadu, India.