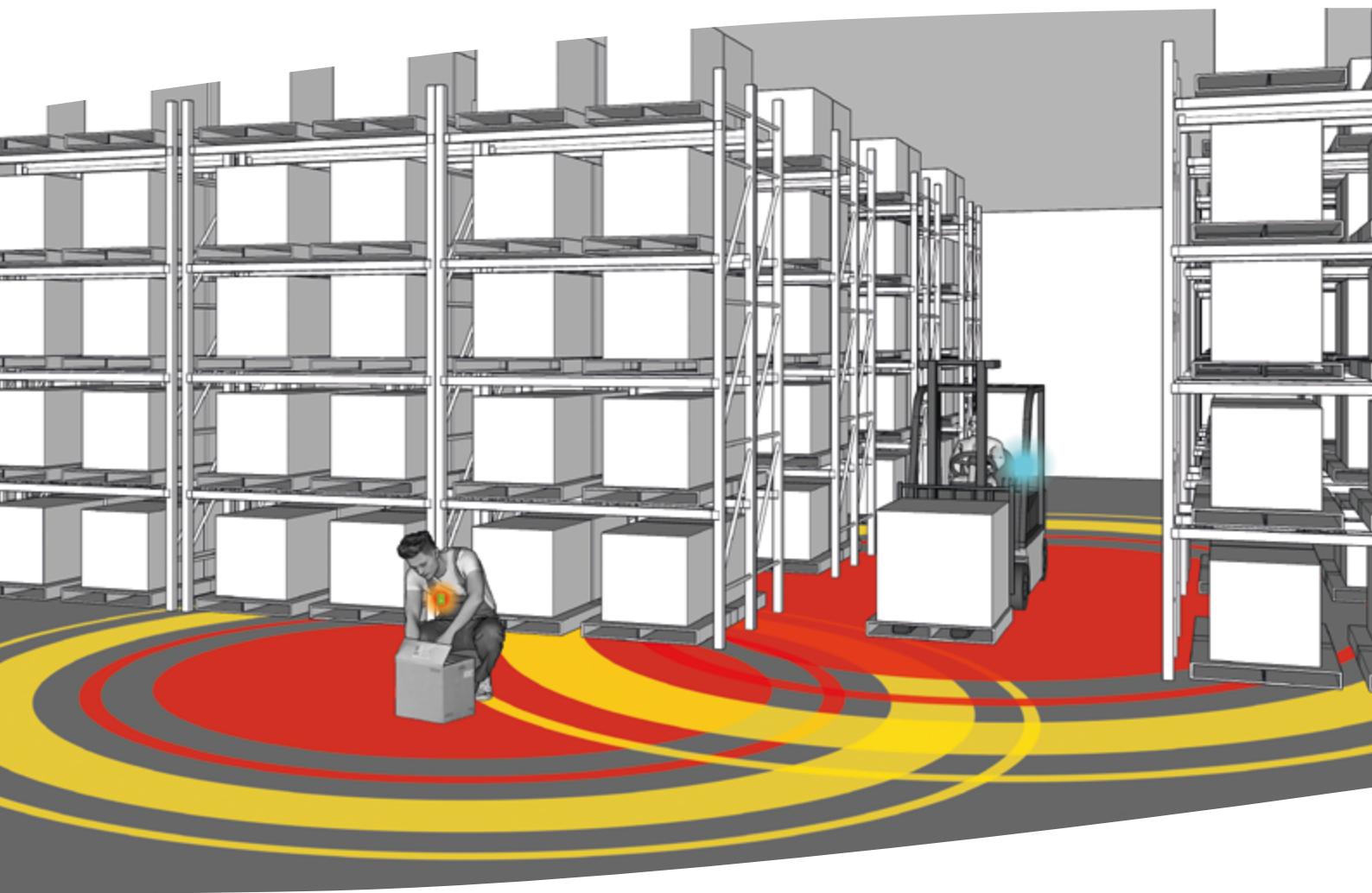


PAS

PEDESTRIAN ALERT SYSTEM



www.claitec.com

Solutions that reduce
occupational hazards caused
by collisions with forklifts.



Image of the Technology Park of the University of Girona.

Thanks to the technological advancements of the last decade and our accumulated experience, Claitec is now able to detect opportunities for improvement that solve occupational risk situations that until today had not been properly resolved, or that still showed high incidence levels.

CLAITEC

We are a technology company specialised in the development and integration of **industrial safety and occupational accident prevention solutions**.

Founded in 2013 by a team of engineers with **more than 25 years of experience** in product engineering, the company has grown and consolidated thanks to the effort and dedication of its radio frequency, electronics, and mechanics specialists. Claitec is now part of Troax group.

Claitec also offers **innovative and current products designed to reduce risks and protect the lives of workers** by applying the principles of technological innovation and offering quality products and services tailored to the needs of our customers.



Claitec is currently present in **more than 30 countries**. Thanks to the **more than 7,000 machines** that have had our solutions installed, we have been able to protect **more than 30,000 people**.

DESCRIPTION

In any environment where people cannot be differentiated from vehicles, there is a risk of accidents.

The PAS system is designed to minimise the risk of collisions by creating safer and more efficient work environments.

It is a two-way system which, on the one hand, warns the forklift driver as it detects a nearby pedestrian and, on the other hand, it alerts the pedestrian of the presence of the vehicle to force a reaction and thus reduce potential risks.

It can easily be complemented by adding other security systems.



HOW DOES IT WORK?

Forklifts must have a PAS system installed, and pedestrians must carry a Tag (or electronic keychain).

The forklift's PAS generates a detection zone around it, adjustable up to 11m. As soon as it detects a pedestrian's tag within this area it generates a signal on both the vehicle and the pedestrian's tag.

The forklift's alert may be a light and/or a sound and - if the vehicle allows it – a limitation in the vehicle's speed limit (while the pedestrian is nearby). The pedestrian's tag warning can be set to light and/or sound and/or vibration.

If on occasions the driver of the forklift becomes a pedestrian him/herself, we can equip the vehicle with an inhibitor to prevent it from acting in front of its own Tag.

The PAS solution is marketed as an easy-to-install KIT.

BENEFITS OF THE PAS

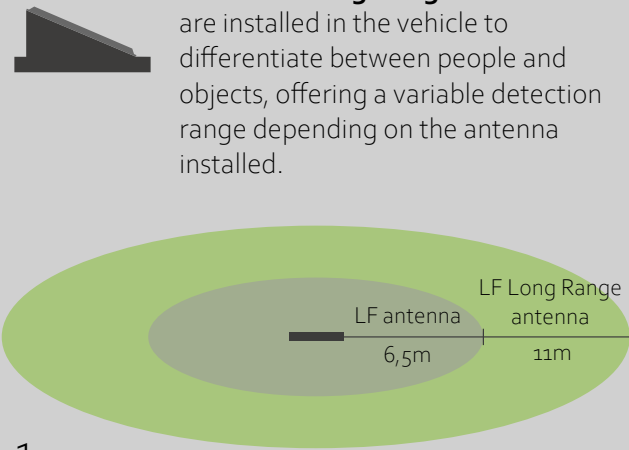
- ✓ It reduces accidents by detection without the need for direct vision.
- ✓ It can differentiate between people and obstacles.
- ✓ Greater control of outsiders.
- ✓ Adjustable distance up to 11 meters.
- ✓ Easily complements other safety systems.
- ✓ Reliable detection of pedestrians in the danger zone of industrial vehicles.
- ✓ Adaptable to any brand of vehicle.
- ✓ Durable and robust components.

AREAS OF APPLICATION

The Alert System can be applied in areas such as:

- Loading and unloading areas.
- Industrial spaces.
- Low visibility crossings between pedestrians and trucks.
- When exiting warehouse corridors at reduced speed.
- And in general, in any area where forklifts and pedestrians coexist, and where the lack of visibility or configuration, creates risky environments with the potential for accidents.


SYSTEM COMPONENTS



LF and LF Long Range antennas are installed in the vehicle to differentiate between people and objects, offering a variable detection range depending on the antenna installed.

The diagram shows two concentric green ovals representing detection zones. The inner oval is labeled "LF antenna" with a radius of 6,5m. The outer oval is labeled "LF Long Range antenna" with a radius of 11m.

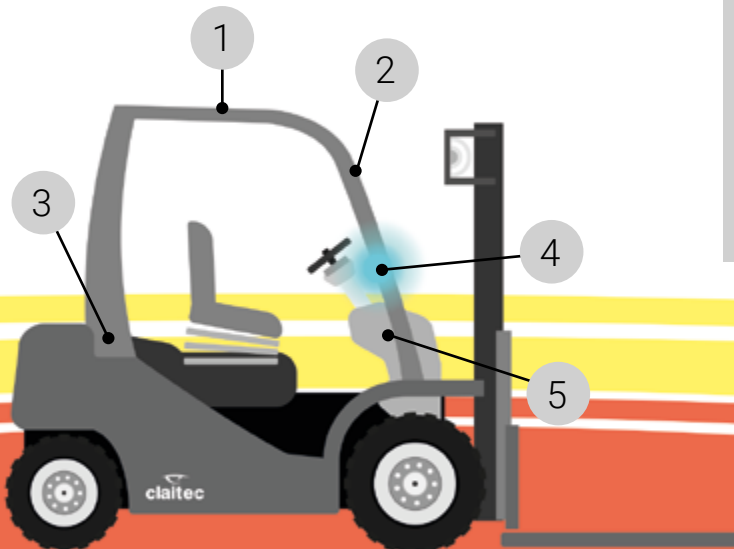
1



DC/DC power supplies adapt different battery voltages in the range of 9V to 160V.


The **TT-50 test tag** is an active device that guarantees the functionality of the system by performing an automatic check every 5 seconds.

3




The **inhibitor** is a tool that prevents the driver's tag from being detected by the forklift where the PAS system has been installed.

This allows drivers to drive the forklifts without interrupting the PAS and leaving "a clear path" for the system to work properly.



2


- Inhibitor T-10
- Mobile Inhibitor
- Inhibitor T-10R
- Active Inhibitor



Warning light

Buzzer

4



The **simple buzzer** regulates the duration of the alert issued by the PAS system, which can vary from 0.1 to 4 seconds.







5


The **AC-50 activator** creates a safety zone around it. It is responsible for detecting tags within this area, as well as sending the alert signal to different devices, be it the pilot light, the buzzer, or the tag itself.

PERSONAL TAGS


Responsible for protecting pedestrians from being hit by a forklift or any other industrial vehicle.
The tags make the operator visible on the detector and alert the driver.

			
	T-10	T-10R	T-10R Badge
 DIMENSIONS	38,5 x 59,5 x 18,1 (mm)	57 x 80 x 19,75 (mm)	89 x 80 x 21,5 (mm)
 LIGHTING	1 LED	5 LEDS	5 LEDS
 SOUND WARNING			
 VIBRATION			
 BATTERY	CR2450 Primary battery (replaceable)	800mAh LI-PO battery (rechargeable)	800mAh LI-PO battery (rechargeable)
 AUTONOMY	6 months	30 days (1 charge)	30 days (1 charge)
 WIRELESS CHARGING			
 PANIC BUTTON			
 WATER RESISTANCE	 IP65	 IP67	 IP67
 CARD HOLDER			

WIRELESS CHARGERS



Unit charger



Charging station

The unit charger and multi-charging station are wireless chargers for the T-10R and T-10R Badge tags.

ACCESSORIES

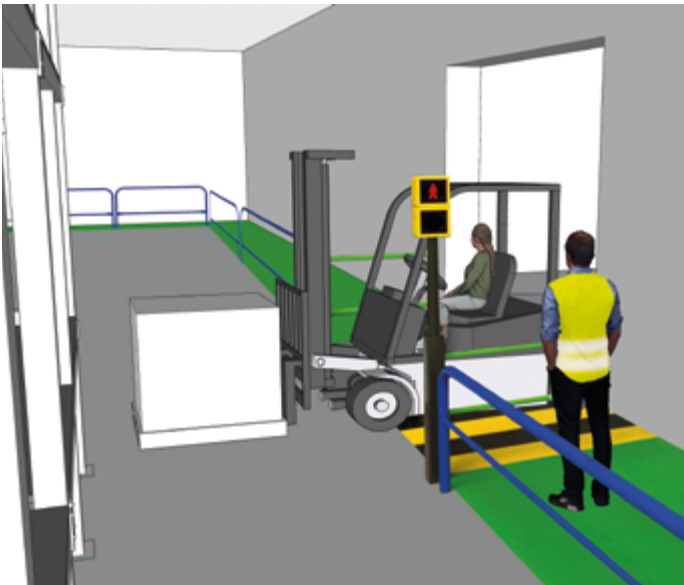


Safety vest with pocket.

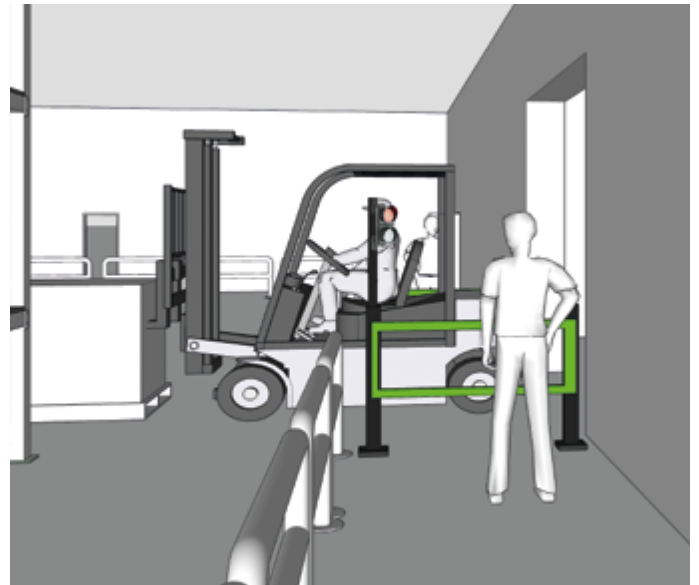


The PAS System can be complemented with the following solutions:

The **Traffic Control System (TCS)**, a comprehensive system that segregates pedestrians and forklifts in the same workspace.



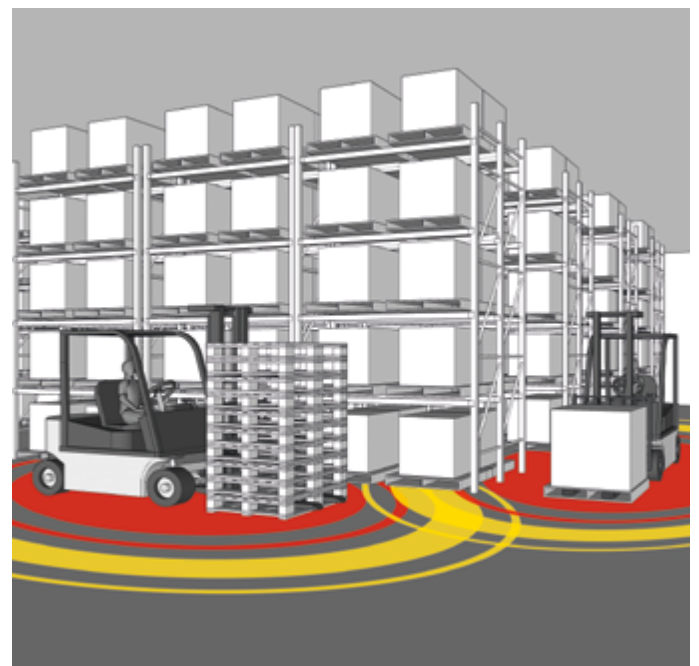
The **Pedestrian Safety Gate (PSG)**, a gate designed to reduce risk situations in high activity environments. It consists of two functions: creating safe pedestrian crossings and restricting entry to staff.



The **Safety Alert Visualisation (VAS)**, a system that warns pedestrians and/or forklifts of dangerous situations by projecting light signals on the ground.



The **Anti-Collision System (CAS-G2)**, warns forklift drivers when it detects other vehicles within its safety zone.



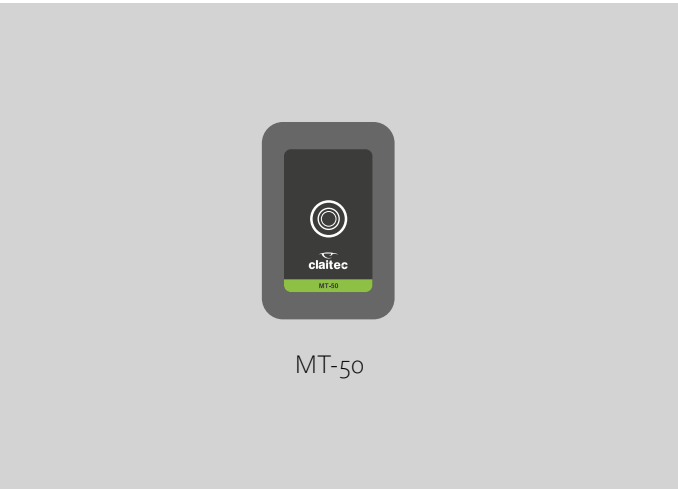
SPEED ZONING

The PAS system can work as a speed limitation system for forklifts.

As illustrated in Figure 1, a change in the speed of the forklift can be activated when they enter or leave a certain area using two MT-50 devices with the HS (High Speed) and LS (Low Speed) configurations.

The MT-50 device verifies that the system is working properly, monitoring both RF communications and the safety zone generated by the AC-50 Activator.

On the other hand, it delimits a safety area in a physical space without the need for the presence of people with T-10 keychains.



MT-50

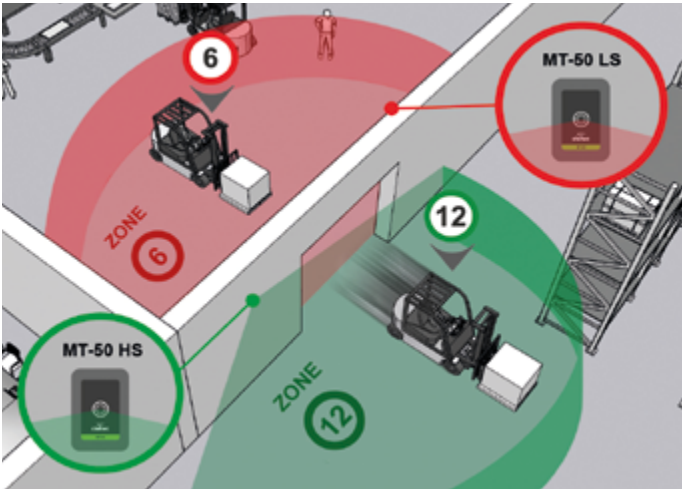


Figure 1

AV-30 VERIFICATION ANTENNA

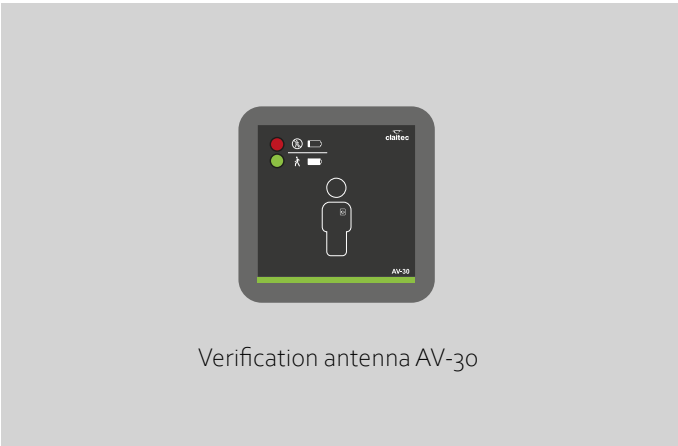
This is a device with three key functions:

It allows users to periodically check the battery status of their personal keychain and the operation of the RF communication of the active tags in a given workspace.

Using additional software and a USB device connected to a computer, this tool also allows users to record the date and time of verified tags.

Secondly, it can be used as an Access Control on both PSG doors or any type of door. And as we can see in Figure 2, it can both produce an output signal to activate an electromagnet as well as activate other elements with a free relay, such as an automatic door, a pilot light, or a traffic light.

The final function of the AV-30 verification antenna is ensuring that none of the workers forget their tag at the end of their task.



Verification antenna AV-30

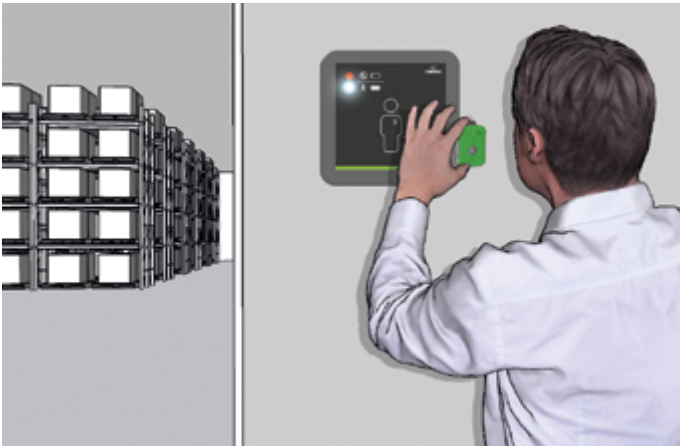


Figure 2



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Claitec Solutions S.L.U

C/ Pic de Peguera,15 Porta B - Local 27
Parc Científic i Tecnològic UdG
ES17003 Girona (Spain)

www.claitec.com
info@claitec.com
+34 972 183 225



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