

PATENTED ACCIDENT PREVENTION SYSTEM



FALCON-IQ

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PACHOM® Technology
Exclusively provided
by www.swisstip.com **SWISS TIP**

PACHOM is a real solution to improve prevention of accidents by collision, the only such system that efficiently alerts the pedestrian worker at risk as well as machinery drivers/operators with optional electrical interface with the machinery.

Especially designed for maximum efficiency in difficult and all environment conditions, with detection technology immune to mud and dust, as easy to install as standard safety cameras, PACHOM focuses only on zones and conditions of danger, as easy to install as safety cameras, implementation and configuration based on machinery and work site requirements, greatly limiting false alarms. PACHOM focusses on the prevention of accidents to pedestrian workers, also between machineries, selected objects and danger zones when needed.

PACHOM is a complete system "vision and safety" solution with Falcon-IQ industrial camera systems, monitors, fibre optic interfaces, IP solutions, hardware support solutions including (oil damped and motor control). Exclusive Swiss patented technology; designed by SwissTIP, and assembled in Hong Kong by Falcon-IQ for world-wide market.

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Swiss Technology Assembled in Hong Kong

Patented Accident Prevention System
Optimizing Safety – Limiting False Alarms

SENSE & DETECT

DANGER ZONE

- PACHOM RF base detection Technology
- PYRO ELECTRIC SENSOR
- CAMERA

VISION

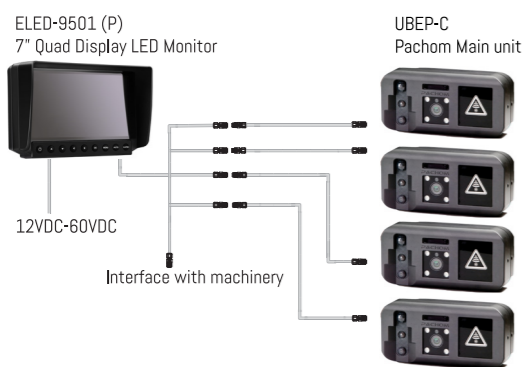


SAFETY & EFFICIENCY



INTELLIGENCE

Up to 4 UNITS may be installed on a single monitor
 As easy to install as cameras, the PACHOM UBEP includes the camera
 Sophisticated installation/implementation possible for complex solutions
 Installation Options include wire to fibre optics converter, recorder, etc.



PATENTED ACCIDENT PREVENTION SYSTEM & SOLUTIONS ADAPTED TO OPERATIONS

Adapting to the realities of operations, limiting false alerts & annoyances while providing step-ups to prevention improvement.

A single accident causing the death or injury of one worker is a major human drama that impacts people's lives and proves very expensive for the company. Families' hurt, worksites are brought to a standstill for the duration of the inquiry, many consequences resulting in substantial human, production and financial losses.

one of the challenges of safety is a prevention system that can reliably detect dangerous situations based on set parameters while allowing people and equipment to work safer in close proximity, limiting excessive work interruptions. It requires capacity of adaptation to the realities of the work sites and the need of workers and machines to work together. All accidents cannot be prevented, but safety can surely be improved.

PACHOM's philosophy is based on using high technology coupled with work site adaptation to help improve safety, with respect to the maintenance of work site efficiency and site realities.

To achieve this, PACHOM has several patented technologies developed especially for its mission of accident prevention while limiting false alerts. In addition to alerting the driver, PACHOM also proposes an innovative concept of alerting workers at risk directly through the use of a PACHOM patented UPI bracelet, which contributes to enhance prevention and to alerting the worker in a reactive way.

PACHOM solutions are applicable to road maintenance, building roads and infrastructure construction sites, mines and quarries, heavy industry, logistics, ports, railways, anywhere where machines and pedestrian workers are found together on the same site and also where machine-to-machine collisions are a risk.

ADVANTAGES

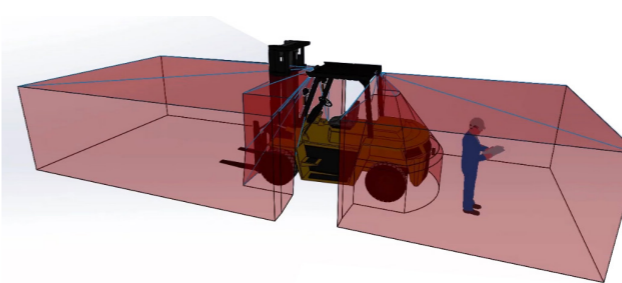
- Integrates multiple detection technologies including the patented PACHOM RF system
- Precise 180 degree RF detection/danger zone, adapted danger zone size to limit unnecessary alerts
- Unlike optical systems (image recognition and lasers), PACHOM RF is not affected by dirt, mud, air born particles, sunlight, darkness, and all of the environmental elements.
- PACHOM RF over radars and other RF systems, limits itself to the real zone of danger and able to alert pedestrian worker.
- Various versions of the UBEP (the core device of PACHOM) exists; the most common version combines in a single unit;
 - 1) PACHOM RF patented detection technology,
 - 2) Pyro electric sensors, detection of workers without bracelets on startup of movement of machinery.
 - 3) Industrial Camera technologies with night vision,
 - 4) Output signals for interface with machinery.
 - 5) Inputs for managing alerts configuration rules
 - 6) Inputs for other external sensors and radar

PACHOM UBEP is highly configurable to focus on high risk of collision with as low risks of false alarms as possible, i.e. no alarms with outside of the immediate path, (danger zone) of vehicle.

For quick installation, standard configurations are available For new adaptations, custom configurations can be set using the wireless UCP (Unit for Configuration of PACHOM).

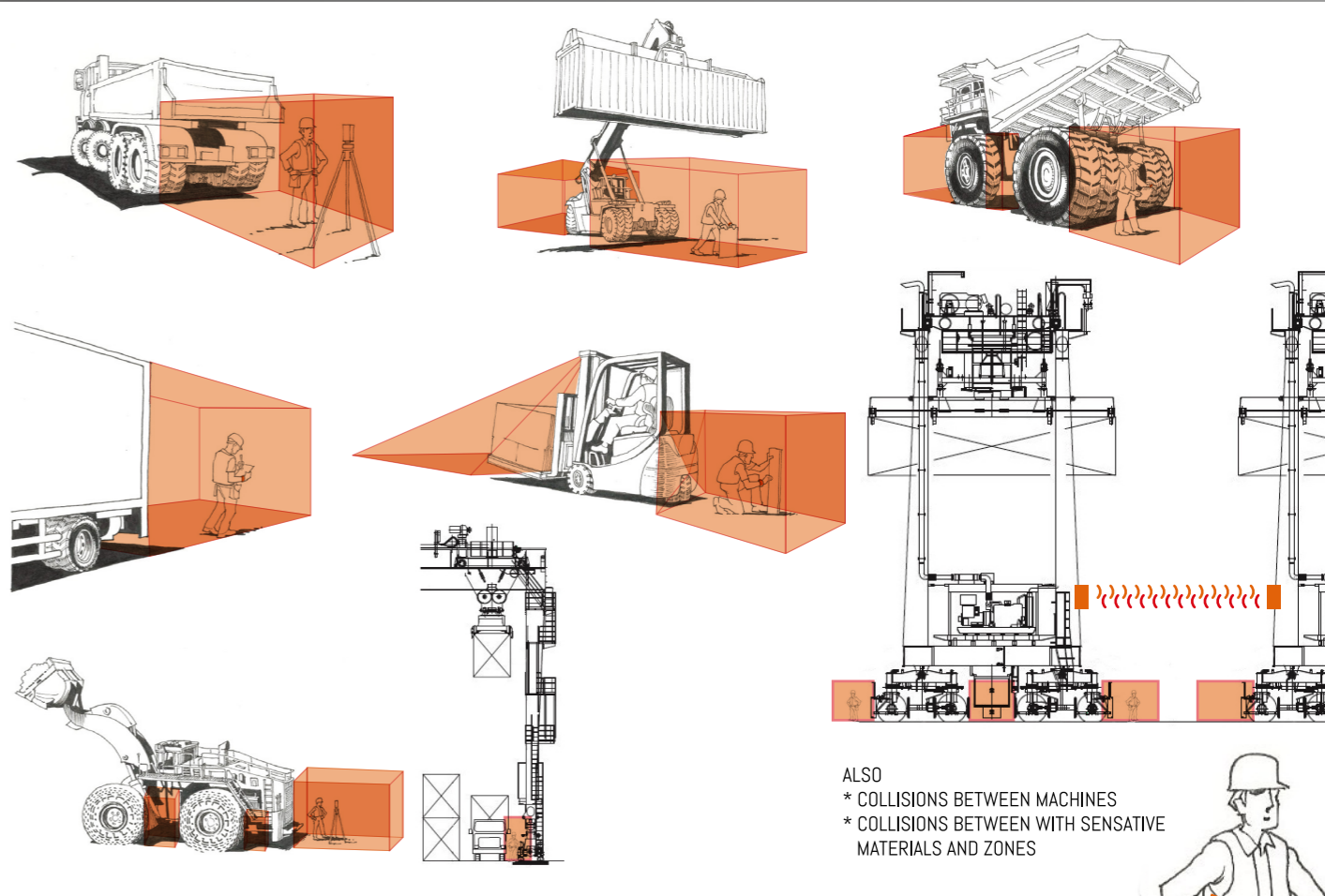
- PACHOM is designed to alert both the worker(s) and the driver/operators of machinery.
- The UPI safety bracelet for workers will signal the alert with soft to strong pulsating vibrations as needed. Alert vibration for pedestrian workers is felt directly on the skin. Its immune to surrounding noises and lighting conditions, to the visual and hearing attention of the worker.
- A LCD monitor in the driver's cabin gives a view of the danger zone automatically and alerts the driver. A single monitor can hold up to 4 UBEPs/Cameras.
- PACHOM TAGs also allows detection of risk of collision
 - o between machineries
 - o between machines and selected sensitive materials,
 - o between machines and selected sensitive zones.
 - o over hidden areas.

PACHOM



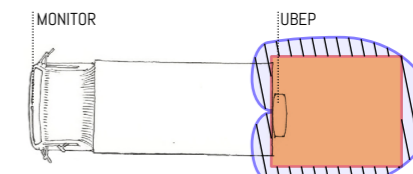
UCP (Unit for Configuration of PACHOM)

The UCP is a wireless device optionally used by PACHOM installers to select pre-set PACHOM UBEP configuration on installation from a general-purpose inventory. It is also a field-engineering tool for highly specialized/custom applications and/or for adapting the system to new safety applications. Storage of up to 64 fixed vehicle/application settings



ALSO
 * COLLISIONS BETWEEN MACHINES
 * COLLISIONS BETWEEN WITH SENSITIVE MATERIALS AND ZONES

The actual detection field (danger zone) is set to focus on the zone at high risk (symbolized in orange colored areas on the drawings) combined with other conditions such to limit false and/or annoying alerts (i.e. in rear of truck when engaging in reverse gear). "The zone can be adjusted on the type of the equipment. For example, covering the sides of a forklift when the wheels are turning" "See above 3D picture showing the danger zones on a forklift"



TECHNICAL SPECIFICATIONS UBEP:

- Water tight, robust anodized aluminum housing, IP67, IP69K withstands harsh environments
- Shock resistant (30G), UV 568 protected, UL-VD fire protected
- VCC operating input voltage 12 to 60VDC automotive & industrial compliant. 1 Amp.
- 3 x alarm output per UBEP in same operating voltage for machine interface and optional differential RS-485 connection. 2 X condition inputs for detection control and external extensions.
- PACHOM TAG detection (external sensing) and PACHOM TAG target extensions (site version of UPI targets) available with interconnection for full site solutions
- Optional 220 mAh optional automatic recharge battery for autonomous operations for 32 hours
- Operating temperature -40°C to +85°C (Oled display and pyro sensors -20°C)
- Camera is 14 bar overpressure dry nitrogen filled to avoid condensation, IR LED system for night/dark vision, picture elements 700 TV lines (HD), Light sensitivity: < 0,01 lux



TECHNICAL SPECIFICATIONS UPI:

- Operating status LED, low battery level warning
- Water, Mud, Dust resistant
- 30 hours depending on use, Induction rechargeable

PACHOM TAGs

The PACHOM TAGs are external devices that complete PACHOM implementation schemes on a need to basis. The TAGs offer the additional options to site installation of PACHOM in addition to installation on mobile equipment. It also serves to the prevention of machine to machine collisions. UPI TAGs serve to "tag" critical sites, objects, other mobile equipment where risk of collision is also critical. UBEP TAGs serve to extend the coverage of a UBEP or as relays to site implementations.