

SAFETY FOR  
CONSTRUCTION  
SITES

# Pr Helty



## Customer

### **Construction companies in Italy.**

The possible market is huge: more than 120 000 building companies in Italy, more than 800 000 in whole Europe.

## Problem

### **High injury and death rates on construction sites.**

In the last year only in Italy there were registered more than 30 000 injuries on the construction sites and more than 100 of them were lethal.

The major number of accidents occur because of the accidental falls from heights. Since it is really difficult to solve this problem from a technical point of view, we are going to focus on the second major problem: workers getting hit by the moving machinery, such as forklifts or other types of vehicles.



## Solution

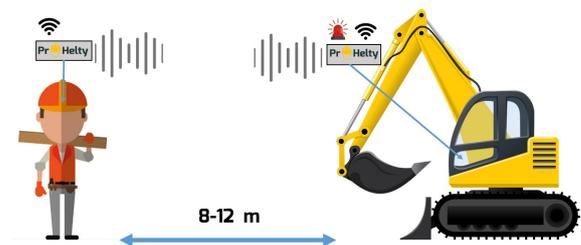
### **Add-on devices on hard hats of workers and for vehicles to prevent the collisions.**

We provide to the construction company 2 types of devices: one to put on the worker's safety helmet, the second one to put inside the vehicle. When the vehicle approaches the worker, both devices start sending a warning signal: to the worker and sound alarm plus a vibration, and to the driver in the vehicle a visible and also sound alarm.

## How does it work?

When the vehicle and the worker get closer to each other, the devices start communicating. If a dangerous situation is detected, such as a possible collision, the worker will be warned a vibration alarm while the driver will be warned through a sound and a visual alarm.

These alarms are sent exploiting different sources of information such as the speed of the vehicle, the power of WI-FI signal and the packet loss in the communication channel.



To avoid that the worker gets annoyed by all these alarms we have combined all this information reaching a Safety Integral Level of order 2. Meaning that we have reduced the false positive to  $10^{-2}$ .



**SAFETY  
IN PROGRESS**

## The price

- ✓ **80 euro for 1 helmet device**
- ✓ **160 euro for 1 vehicle**

Medium size company: **1600 euro**  
(10 helmets, 5 vehicles).

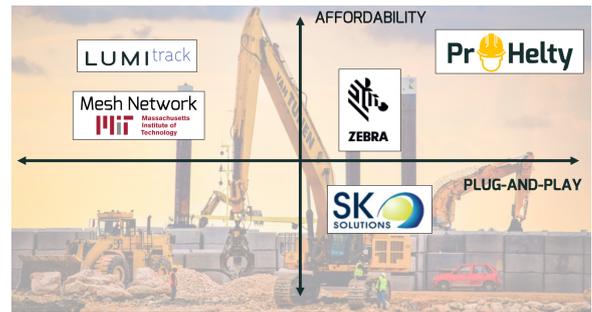
Look for our product in the biggest Italian retailers, selling safety products for construction companies.



## Why us?

Mostly all of our competitors are more sophisticated from the technology point of view and more difficult to implement. To perform they involve the number of sensors on the perimeter to track the movements of machinery and workers, meaning that it requires some pre-installation procedures.

Instead what we offer is a simple plug-and-play solution with already preinstalled preferences. You just buy it, turn it on and use, it is as simple as that. If you need to add new components: more devices for workers or vehicles, we have a dedicated database that contains all the information about previous devices that were shipped to you. So after your new order we ship you a new component that is the same easily installed and used.



## Future plans

Workers are often asked to put in overtime. Though a welcome source of additional income, this time away from family (e.g., up to six 10-hour days) can also bring additional emotional stressors. Working long hours can lead to health problems and an increased risk for accidents due to fatigue. Increased overtime may also lead to more night work, which brings a whole new set of stressors (e.g., disruptions to family life and the body's circadian rhythms). When time is stretched thin, safety inevitably suffers, along with worker health (both mental and physical).

To avoid those types of accidents we would like to offer the next version of our product – Prohelty 2.0 to be able to monitor the health condition of the worker: mainly, heartbeat monitoring and temperature monitoring.

The Prohelty 2.0 will consist of 2 components:

- Sensors put on the hard hat of the worker;
- Application to receive and analyse the data for managers of the workers.

During the working day, the sensors will constantly collect data about health condition of a worker and send it directly to the manager. There the data is analysed based on the statistical data of the concrete workers previously inserted in database (normal temperature, heartrate etc) and then depending on the calculated threshold there will be a signal indicating that a worker needs to take a break.

