



fleet2track

A world map where the landmasses are composed of a dense collection of small, multi-colored dots in shades of blue, green, orange, and grey. The map is centered on the Atlantic Ocean.

INSIDE ASSET TRACKING
CASE STUDY

THE PROJECT

The customer works in the fashion industry, in particular women's bags, and finds himself having to solve the following problems:



THE CUSTOMER RELIES ON
COURIERS FOR THE
TRANSPORT OF THE GOODS

THE WORKFLOW

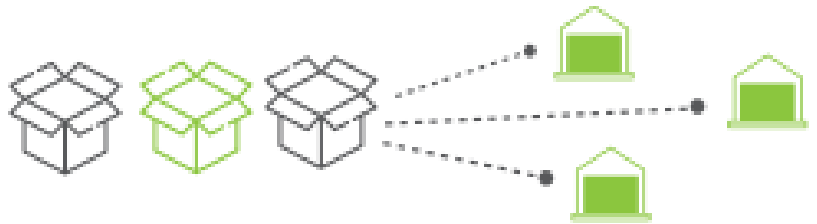


1.

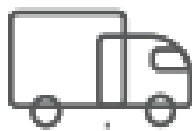


The courier goes directly to the customer's production facilities to take the goods and bring them to their sorting warehouse.

2.



Here the operators sort the various boxes for the various destinations. This activity is mainly based on grouping the boxes by destination.



3.

Once this activity is completed, each group is loaded back onto a truck for delivery to their destination.



**THE GOODS ARE USUALLY
LOCATED IN INDIVIDUAL
BOXES**

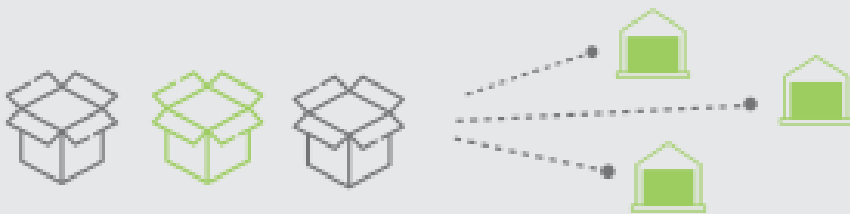
PROBLEMS



WE HAVE DIVIDED THE MOMENTS
IN WHICH GOODS CAN BE
COUNTERFEITED AND STOLEN

COUNTERFEITING

In the case of counterfeiting the most dangerous moment is when the goods are grouped for the various destinations.




THEFT

As far as theft is concerned, the most dangerous moment is from the courier warehouse to the last destination.



SOLUTIONS

RFID/BLE TAGS APPLIED TO EACH BOX



Based on **BLE** technology (Bluetooth Low Energy), **beacons** are active sensors, powered by a battery, equipped with an electrical circuit and antenna. They allow to transfer data with all mobile devices. They are relatively small. Depending on how much autonomy you want to give to the device, in fact, the battery can be more or less large and, consequently, the size of the device will also be more or less large. Beacons can be used as a unique identification system for objects, vehicles and people.

GPS SYSTEM INSTALLED ON THE COURIER'S VEHICLES

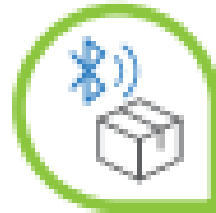


ON AN EVEN MORE ADVANCED LEVEL, BEACONS CAN BE USED TO PROVIDE LOCALIZATION WITH AN ACCURACY OF AROUND 2/3 METERS.


How does it work

The customer applies a beacon (BLE) on each box and an NFC tag sewn on each bag.


BLE





NFC



When the goods arrive to the courier and are loaded into the vehicle, the **GPS** device has a BLE antenna which, in addition to monitoring the vehicle's path in real time, also checks all the boxes inside.

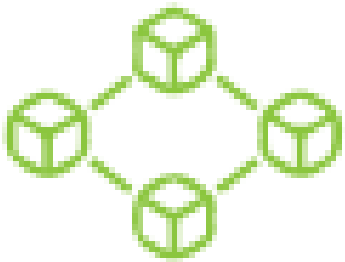


Once the goods arrive at their destination, the **NFC** tag is read via smartphone to validate their authenticity.

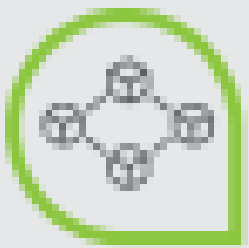


THE CHECK IS PERFORMED EVERY 60 SECONDS. THIS ALLOWS US TO ALWAYS KNOW THE POSITION OF THE VEHICLE, RECONSTRUCT THE ROUTE AND HAVE A WARNING IN CASE OF THEFT

FUTURE IMPLEMENTATIONS



We are considering the implementation of a **blockchain** system for the authenticity of the merchandise.



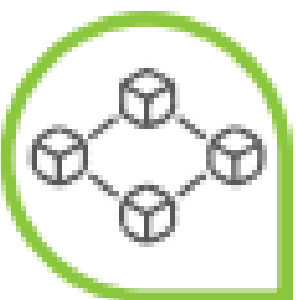
WHAT IS IT?

The Blockchain is a shared digital register that collects information by grouping it into blocks, concatenated in chronological order and protected by an advanced cryptographic system.

THE REVOLUTION

The revolution is mainly linked to the fact that information is no longer recorded in a centralized server, but stored in blocks which, communicating with each other, break up the information and share it among the nodes of the network.

The main advantage of this system is that it's very difficult to attack or tamper with. This is due both to the cryptography that protects it and to the fact that it would be necessary to attack all the nodes of the network to obtain access to the information; in traditional systems it's enough to attack the central server inside.



THE SYSTEM WILL PROVIDE CONSUMERS WITH THE OPPORTUNITY TO TRACE THE ENTIRE PRODUCTION HISTORY OF THE GOODS PURCHASED, IN ORDER TO PROVE THEIR AUTHENTICITY, FROM THE RAW MATERIALS TO THE POINT OF SALE.