



Ajuntament de
Terrassa



Mobileye, applied in Terrassa City

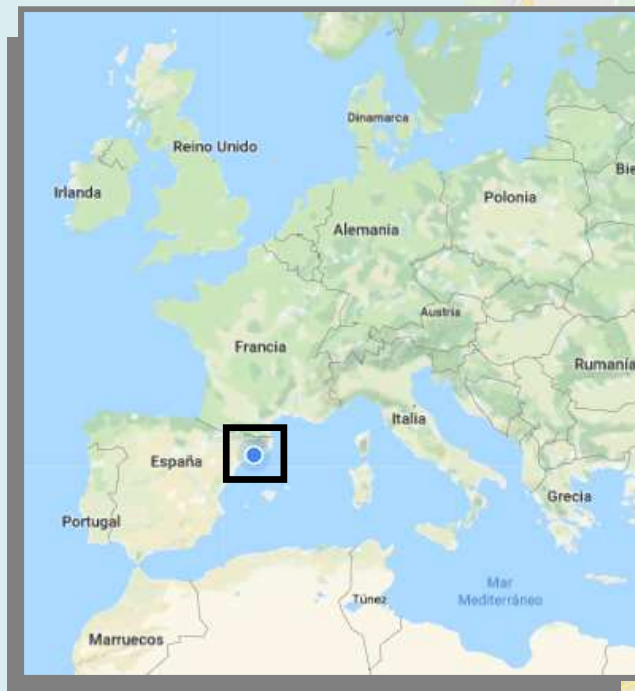


9th International Cities for Mobility Congress

19th june 2018

World Leader in Collision Avoidance &
Autonomous Driving Technology

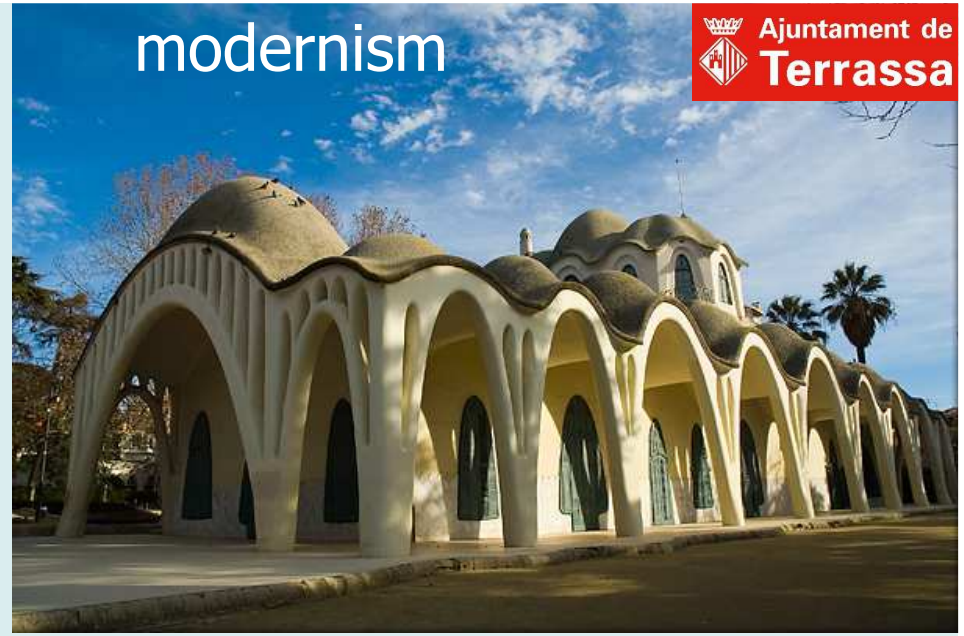




industry



modernism



Traditions & culture



medieval



PRESENT SITUATION

Mobility of **Terrassa** citizens

215.706

Habitants

727.971

Trips per day

3,6

Trips per day and person



60%



31%



9%

Internal modal split

45.000

Trips per day **in bus**

An aerial night photograph of a historic building with a complex roof structure. Several roof terraces are illuminated from within, casting a warm glow. The building is surrounded by other urban structures, including a prominent tower in the background. A light blue banner is overlaid at the bottom left, and a red banner with the Ajuntament de Terrassa logo and name is at the bottom right.

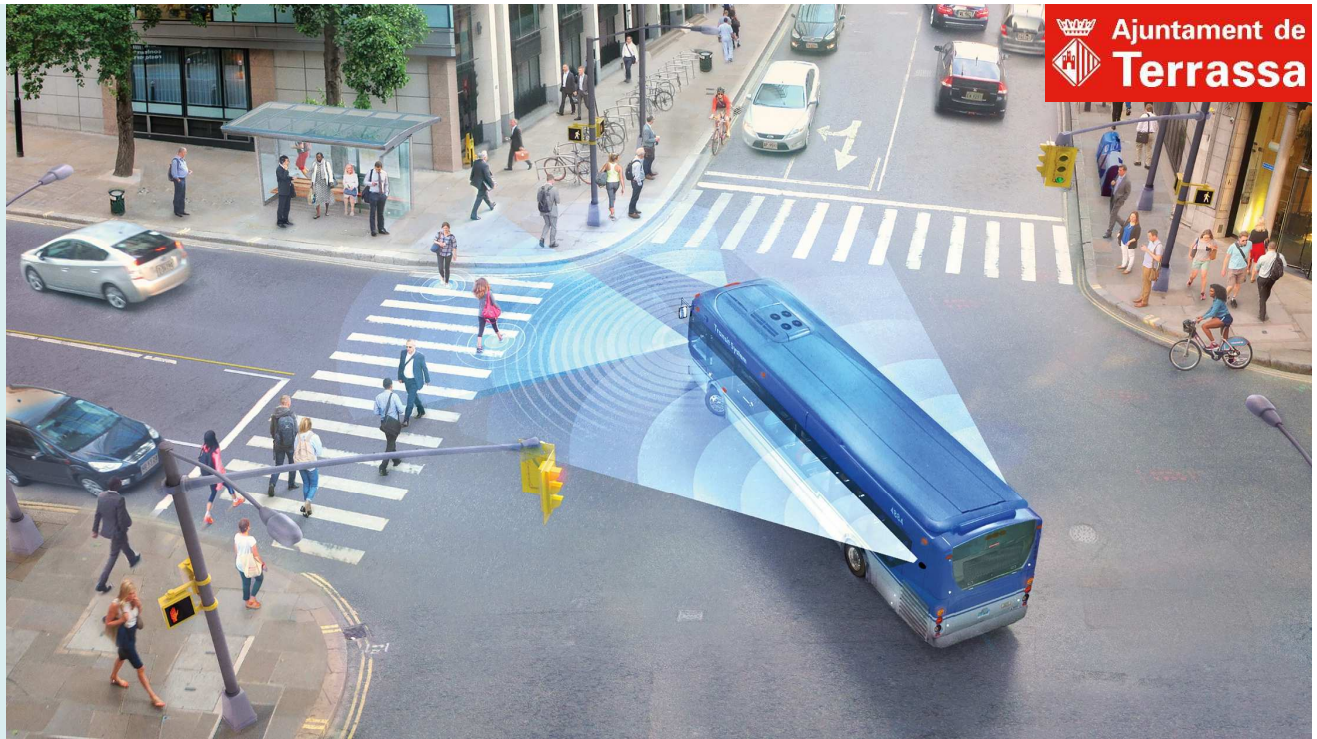
Aftermarket Solution



Ajuntament de
Terrassa

[The following text is a dense, handwritten manuscript, likely a letter or a page from a book. It is written in a cursive script and is mostly illegible due to the quality of the scan. The text appears to be a continuous paragraph or a series of connected sentences. The handwriting is somewhat slanted and the ink is dark. There are some visible ink blots and the paper has a slightly aged appearance. The text is written in a single column, filling most of the page area.]

Shield+™ for heavy vehicles



- Central Visual Display
- 2 additional side displays for the detection of pedestrians, cyclists and motorcycles
- Designed for heavy vehicles with blind spots
- A good solution for urban environments

How does the driver receive the warning and risk alerts? Security features System Mobileye Shield +



Hazard Zone Announcements at Blind Spots (PDZ)

When a yellow pedestrian appears in one of the side warnings, it will be indicative of **a vulnerable user in a dangerous area** within the blind spot on that side

The Mobileye PCW System warns of a collision with pedestrians or cyclists.

It warns by acoustic and visual signals up to 2 seconds before the possible collision with a pedestrian or cyclist

Collision warning in blind spots (PCW)

When a red pedestrian appears on one of the side warnings, an alert will sound and indicate that there is a vulnerable user in a **situation of imminent collision** within the blind spot on that side of the vehicle

Alerts that prevent accidents in real time



Forward Collision
Warning



Pedestrian
and Cyclist
Warning



Lane Departure
Warning



Headway
Monitoring
& Warning



Speed Limit
Indication



Shield+ Hot Spot



Ajuntament de
Terrassa

SHIELD + Terrassa

Evolution of the number of Total Events

8 Equipped Buses

10 Analysed Months

Km. Driven:

368,646.8

Total number of events:

1,053,259

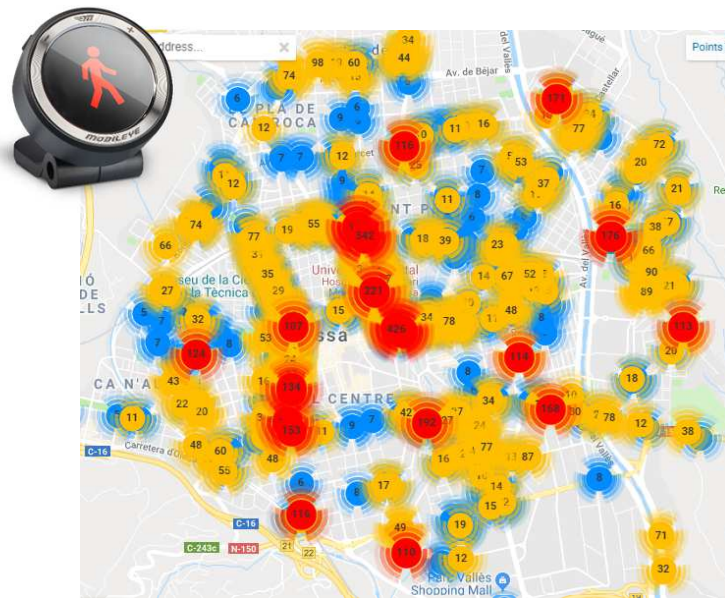
Total number of alerts:

28,111

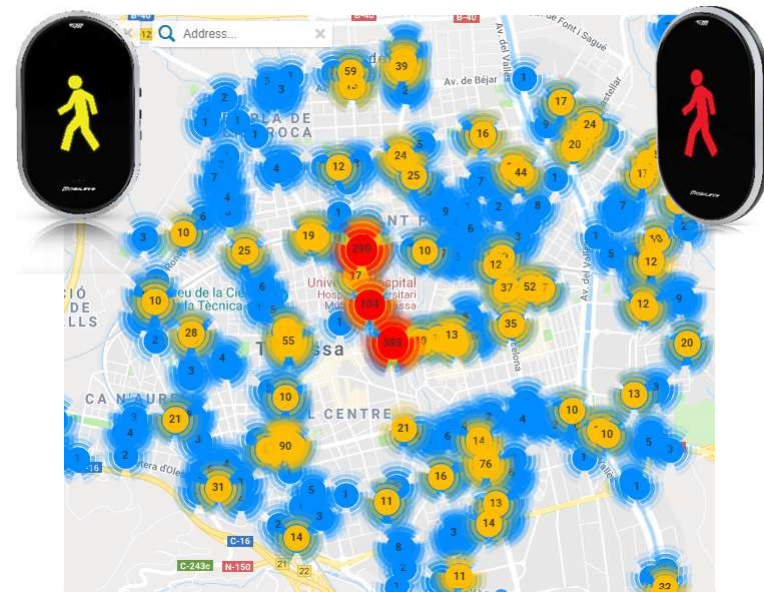
Total number of lateral alerts:

6,276

The lateral alerts are concentrated in 3 clear points of the city, while the frontal alerts are more distributed.

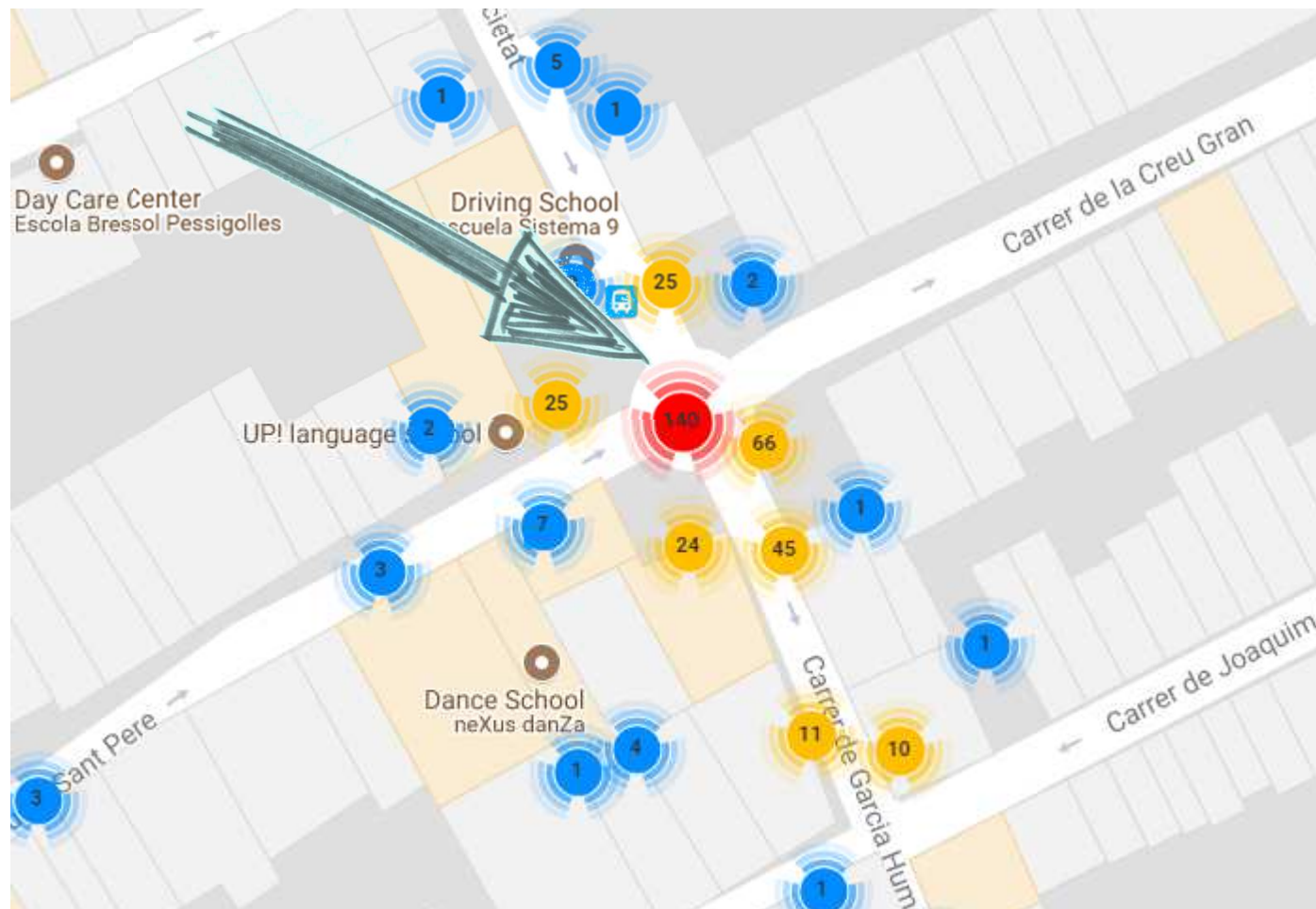


10 Months **Alerts** Analysis
Pedestrians, motorcycles & Cyclists



10 Months **Lateral Alerts** Analysis
Pedestrians, motorcycles & Cyclists

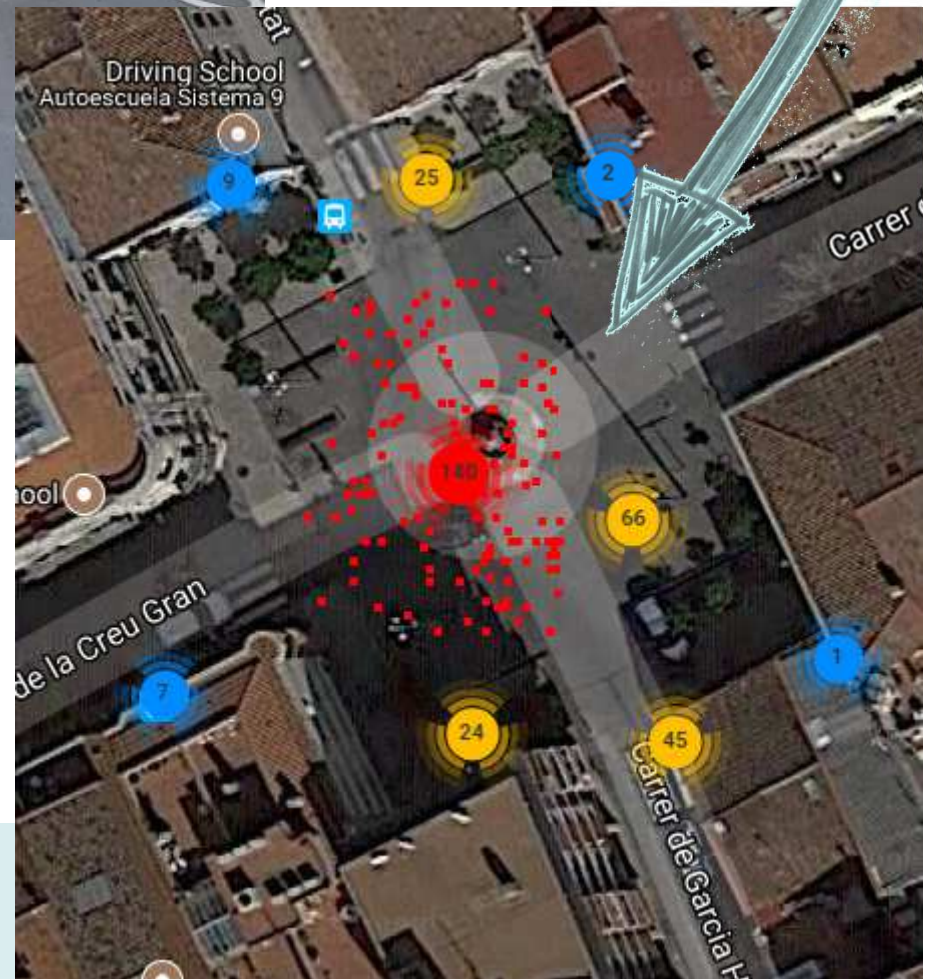
Hot Spot Detected in Plaza de la Creu Gran



Example 1

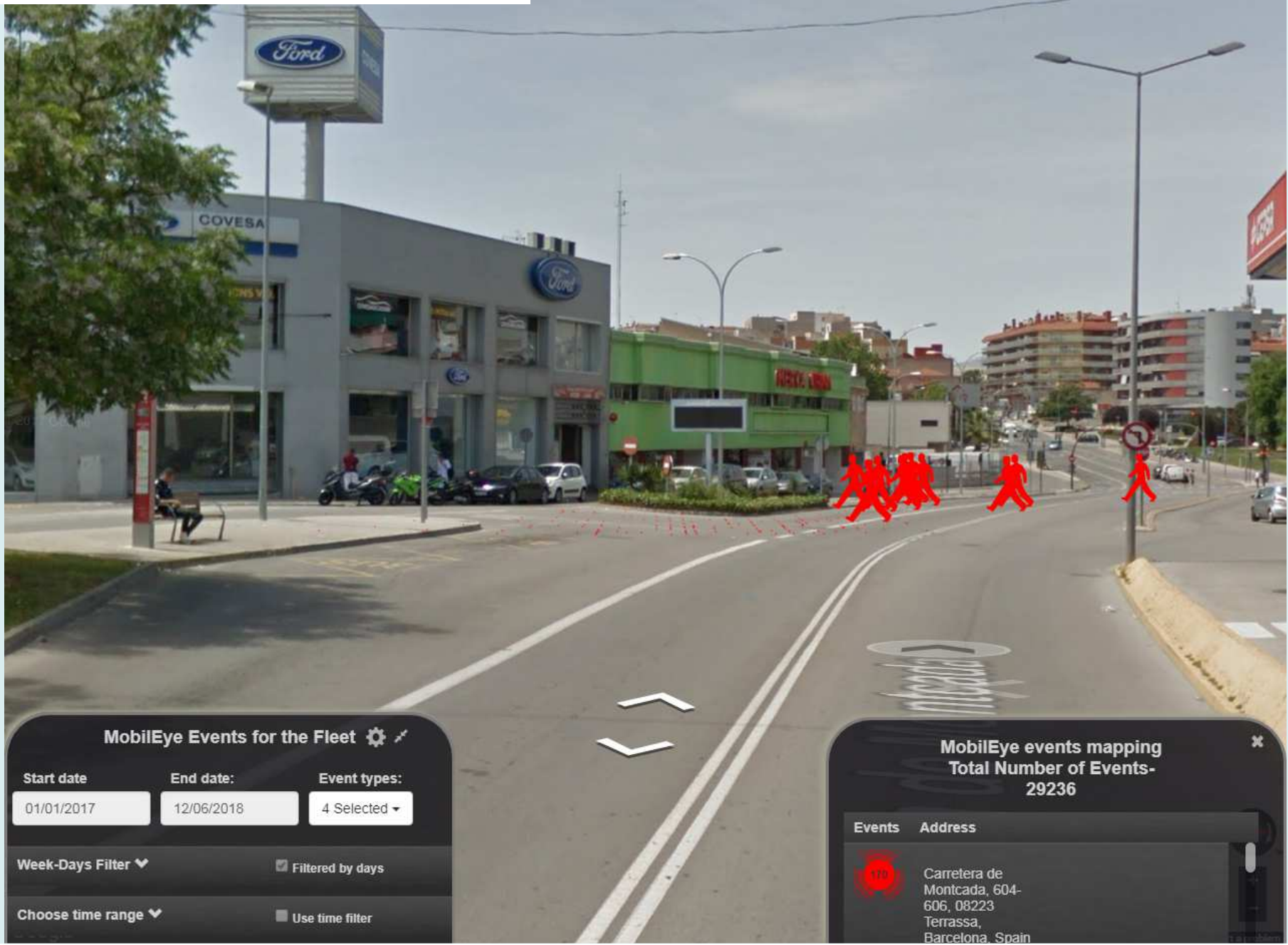
Street View

Plaza de la Creu Gran

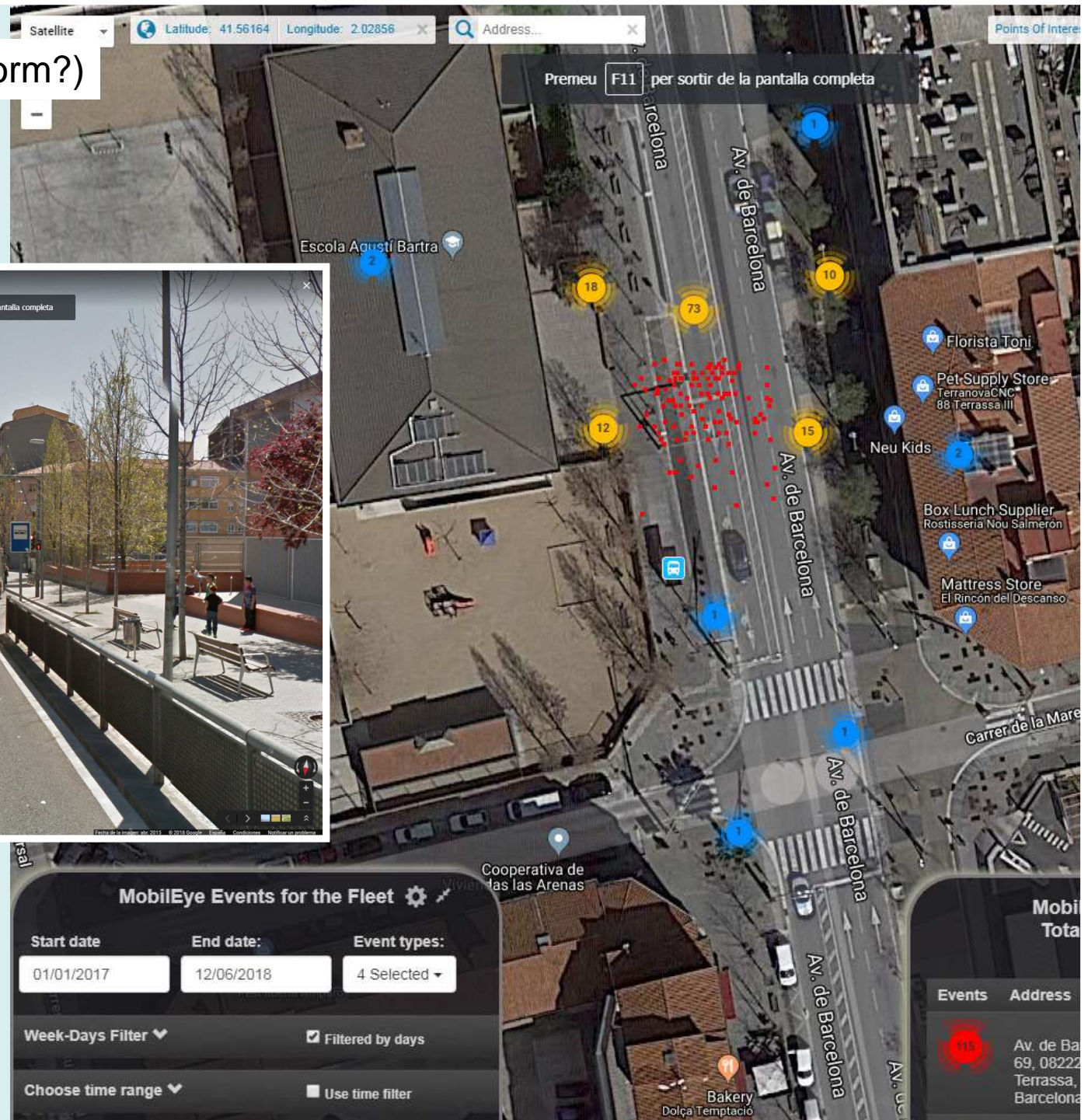


- Pedestrian Crossing by the road
- Roundabout without landing marks

Example 2 (pedestrian crossing?)

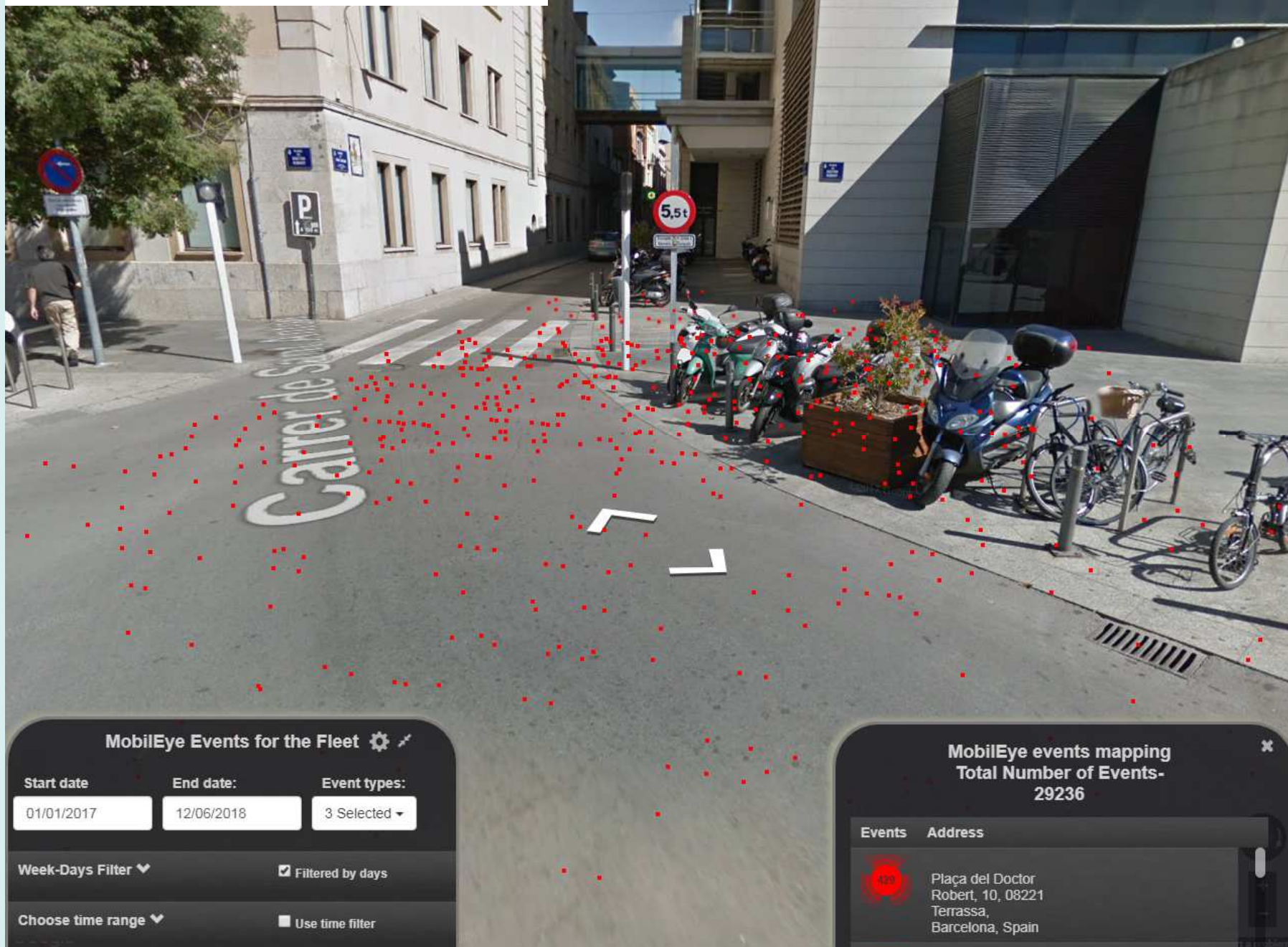


Example 3 (Bus platform?)



Plaça del Doc Latitude: 41.56351 Longitude: 2.01694 Address...

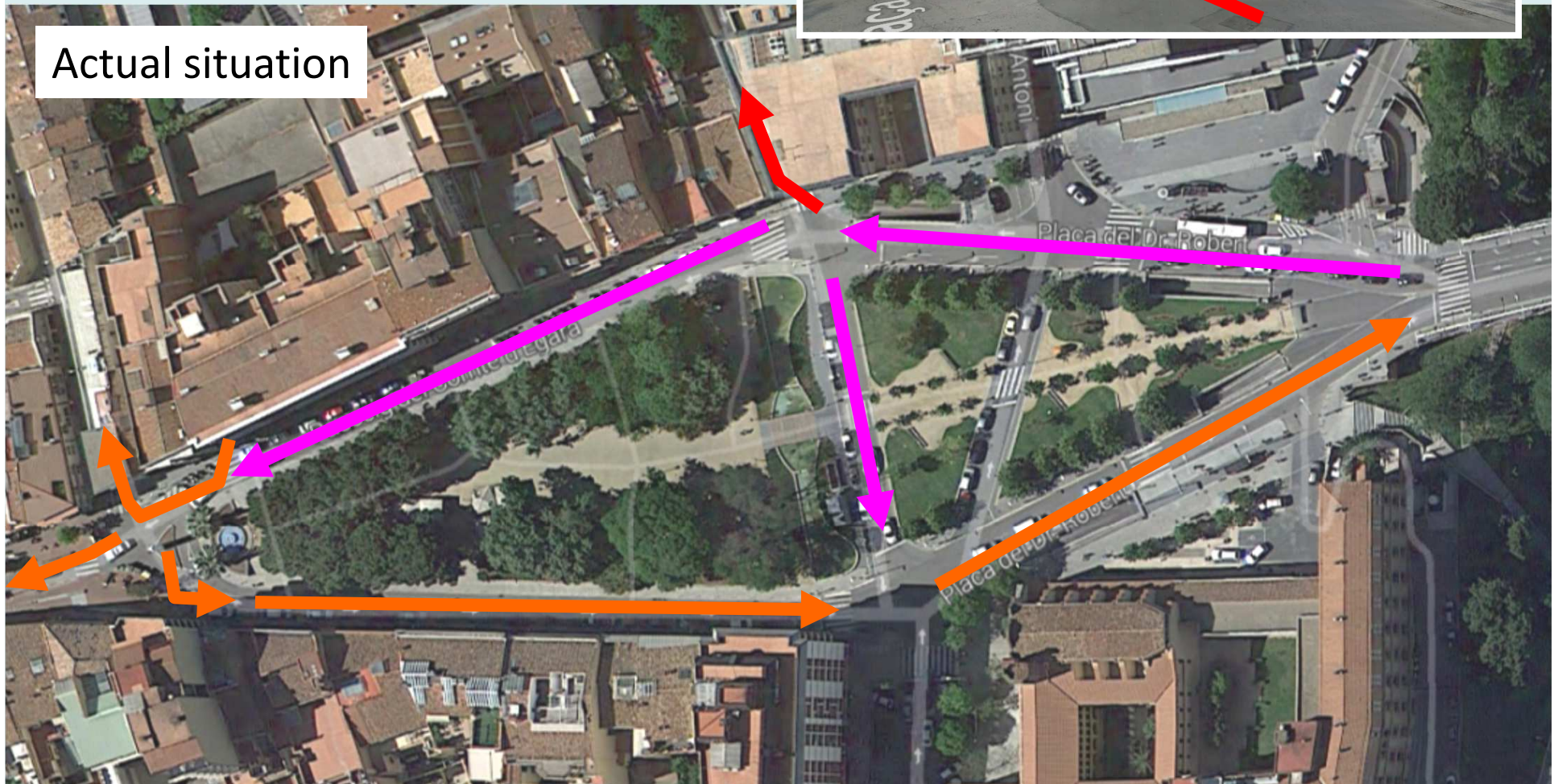
Example 4 (new urban planning?)



Example 4 (new urban planning?)



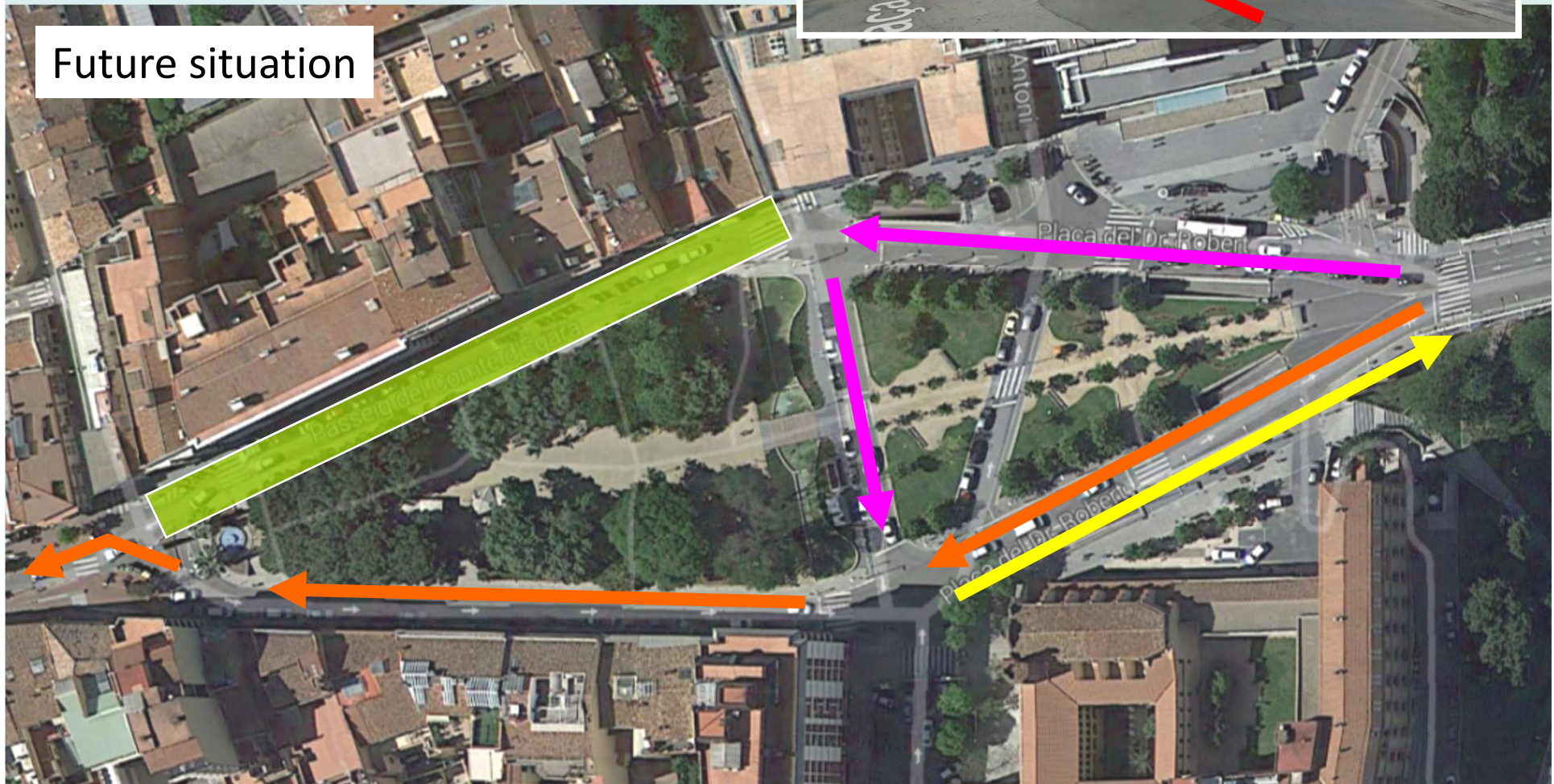
Actual situation



Example 4 (new urban planning?)



Future situation





Conclusions



Ajuntament de
Terrassa



- **No accidents** within the studied period
- Additional system to **prevent accidents**
- Each bus in Terrassa has an average of 2'61 lateral alert each day
- The Bus Operator, TMESA, is satisfied with the improve of the driver behaviours, mainly with the maintenance of the safety distance
- The drivers consider the technology **helpful** in order to know if they have vulnerable users in the bus **blind spots**.
- It is not an annoying system for drivers.
- Public Administration have an Additional assistance system to **improve urban planning**
- **Less economic costs** for the Bus Operator, preventing accidents
- **Improvement in citizens quality of life** because are safer with this system



9th International Cities for Mobility Congress

19th june 2018

Thank You.
Drive Safely!



**Ajuntament de
Terrassa**

Pau Vilaplana Vilar

Mobility and transportation specialist at Terrassa City Council.

pau.vilaplana@terrassa.cat