



INTERNET OF THINGS



IOT SYSTEM FOR ROAD HAZARD WARNING

1. THE FACTS

All over the world, **more than half of all road traffic deaths** are among vulnerable road users: cyclists, pedestrians and motorcyclists.

EUROPE

2.100 cyclists are killed every year
250.000 are injured

SPAIN

70 cyclists are killed every year
7.400 are injured



Sources: WHO, ERSO, DGT

2. THE SOLUTION

AUTOMATIC ROAD OBSTACLES NOTIFICATION

Technological solution to provide drivers a "sixth sense" which allows them to anticipate hazards and risky situations.



Drone



Mobile Connectivity



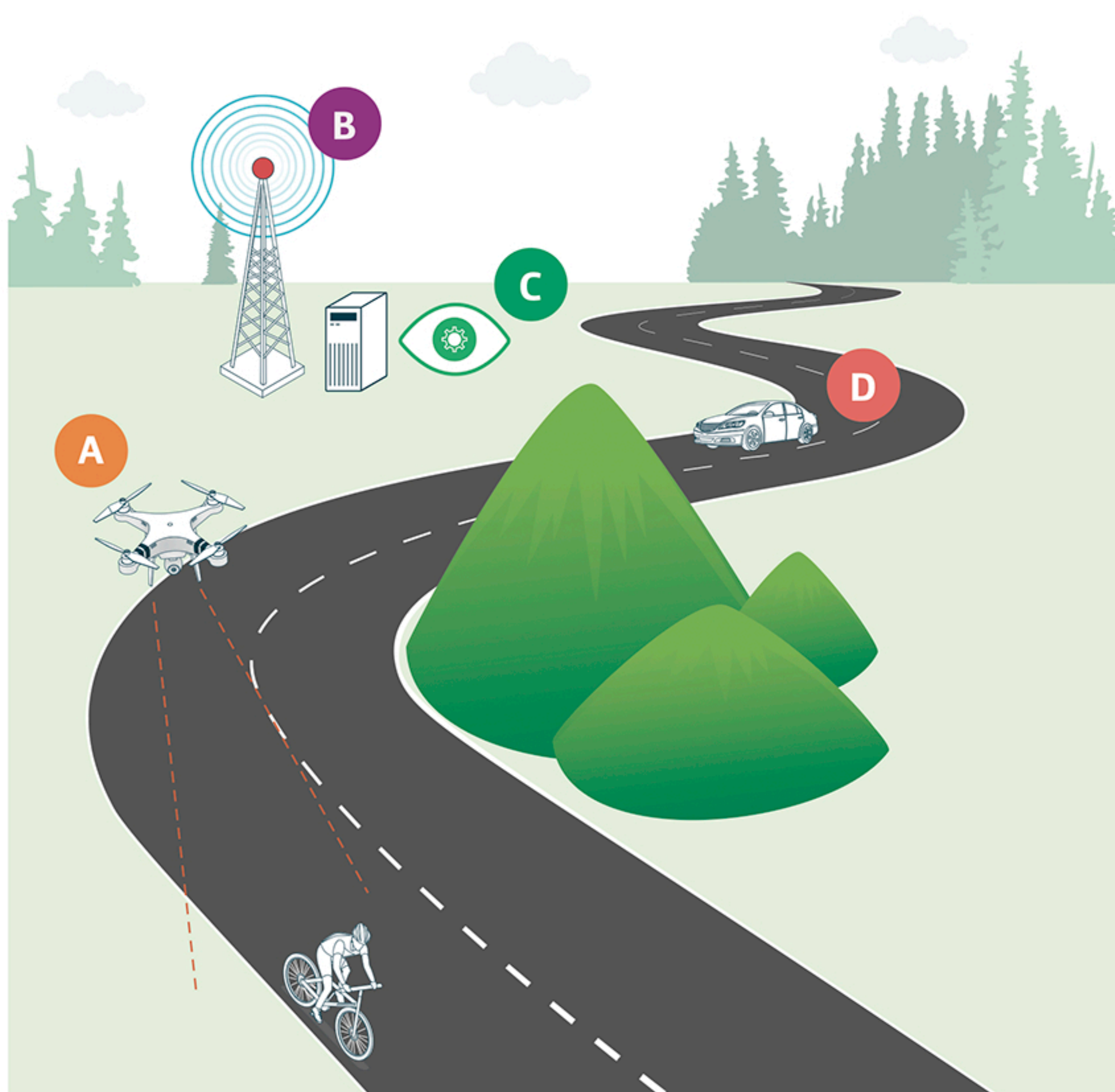
MEC
(Multi-Access Edge Computing)



Computer vision +
Machine learning



Connected Car: C-V2X
(Cellular Vehicle to Everything)



- A** Thanks to mobile connectivity, the image captured by the **drone's** camera is sent to the system in real time.
- B** The image is processed in the **Multi-Access Edge Computing (MEC)**, which allows the processing of large data at the network edge and the immediate response enabling critical communications.
- C** Thanks to the **Computer vision** and the **Machine learning** technologies installed in the MEC, it is detected when there is a bicycle or any other obstacle circulating on the road.
- D** Thanks to **C-V2X (Cellular Vehicle to Everything)**, the car can communicate with its environment. Connected cars moving in the same direction receive an alarm so that drivers are aware if there is a cyclist ahead and must leave space when overtaking him.

This **Technology solution** can be used to detect **different obstacles** just by training the **Computer vision** and **Machine learning** system.



Animal crossing



Fallen rocks



Uneven road



Pedestrian crossing