IoT road hazard warning system

Objective: Technological solution based on C-V2X technology, providing drivers with a 'sixth sense' to anticipate hazards and risk situations.

Description:

The aim of the project is to demonstrate an Internet of Things solution for early detection and risk warning to drivers driving along a road in two specific cases that frequently lead to highly dangerous situations:

- The presence of a cyclist riding on the same road.
- The existence of a car stopped on the road due to a breakdown or other type of incident.

The Internet of Things system consists of a drone with a camera, which captures images of what is happening on the road and sends them in real time via Telefónica's mobile network to a server at the edge (Edge Computing Technology), which processes the images using artificial vision and machine learning technologies to detect whether there are bicycles, or a vehicle stopped on the road. If so, it sends an alarm to the SEAT connected car and informs the DGT 3.0 ITS platform.

The vehicle is connected to the network thanks to a Telematic Control Unit (TCU) using C-V2X (Cellular Vehicle to Everything) technology thanks to software that enables communication between the vehicle's internal network and its environment (the DGT3.0 ITS platform, signalling and infrastructure systems, other vehicles, etc.).

This technological solution can be used to detect different obstacles by simply training the artificial vision and machine learning system.

Press release

5G   Edge Computing   Connected Car C-V2X   Uplink Capacity   Machine vision + Machine learning   Low Latency