Prototype offers dynamic approach to pedestrian crossing

October 10 2017, by Nancy Owano

Credit: umbrellium

(Tech Xplore)—A cyclist and driver's nightmare: A person unexpectedly walks out into the road. An inattentive pedestrian's nightmare: Breaks and fractures, if not worse, from such collisions.

There is a solution to keep everyone alert, whether behind the wheel or on foot. A smart zebra crossing has been developed and it can warn drivers about pedestrians who walk out onto the road unexpectedly.

LEDs are embedded into the road's surface.

Matthew Field, *The Telegraph*, said the smart road surface can mark out zebra crossing lines by lighting up the road surface with LEDs.

The crossing has a dynamic "vocabulary" of signs, changing markings to suit conditions such as increasing footfall, a child running out into the road and signs for cyclists.

"The crossing can turn road markings green automatically to tell pedestrians to walk and can differentiate between people, cyclists and vehicles to change road markings accordingly," said *The Telegraph*.

In the digital age, endangered types of pedestrians include the smartphone "zombies," as a headline in *Alphr* put it.

The Telegraph: "It can also adapt to modern pedestrians' habits, such as being glued to a smartphone, using bright colours to grab their attention and make them focus on the road ahead."

The Smart Crossing, from insurance company Direct Line, and in partnership with Umbrellium. can update markings. How? Reports said the LED crossing system uses sensors to respond to the movement of vehicles, cyclists and pedestrians.

How it works:

The crossing does not exist until it's safe for you to cross, said *Wired*, and "then LED patterns appear to direct people and stop cars." Sian Bradley wrote, "two cameras are installed to film the street from opposite ends. They merge these images and, using machine learning, classify the objects in the scene: whether they are pedestrians, cyclists, a car, or high-sided vehicle."

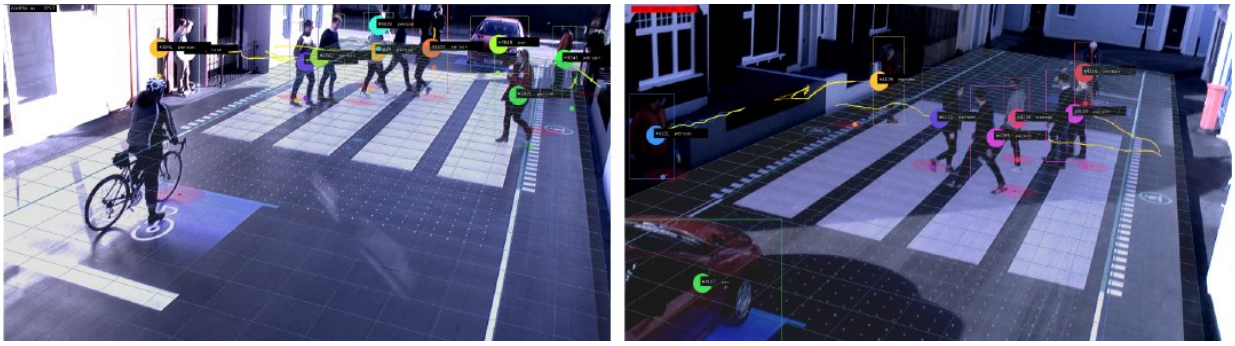
Umbrellium's team includes architects, designers, urbanists and technologists with an eye on the future of cities.

This prototype was unveiled in London; Umbrellium's Usman Haque, founding partner, expressed how its crossing concept is more in tune with the times.

Crossings designed years ago, after all, were a reflection of a different type of city and interaction."

Umbrellium elaborated on this point, saying "crossing designs have not been updated for the ways that we use, or need to use, our streets in the 21st century. Most discussion about road technology focuses on vehicles, but ...we have created a responsive road surface that puts people first ...to account for streets with more cars, pedestrians and technology, and a different societal relationship to urban transport infrastructure."

Their more modern-day crossing concept also addresses the possibilities of people on mobile phones who might not be looking up.



Credit: umbrellium

The arrows and colors are designed to be "much more in your face, so your attention is pulled from your phone and onto the road," said *Wired*.

So far they showed their prototype. So what's next?

The prototype Smart Crossing was displayed in a trial in London, said *The Telegraph*.

Wired said the project was still some way from completion. "In the real world, there would be multiple detection systems, to be fail safe. If the camera systems still failed, Umbrellium have a version that has a pressure sensor which detects where footsteps are."

Credit: umbrellium

More information: umbrellium.co.uk/initiatives/starling-crossing/