



APPLICATION STORY

City of Metz gives pedestrians more time to cross the road

FLIR TrafiOne thermal sensors allow for dynamic traffic light control.



The City of Metz, France has installed thermal sensors from FLIR to make it safer for groups of pedestrians crossing roadways. A first for France, the experiment involved placing pedestrian sensors at two critical locations in the city to protect reckless pedestrians who have a habit of crossing at red lights.

IN-ROAD GUIDANCE LIGHTING

When school lets out, children flood the Boulevard Paixhans and Place du Roi-George in the center of Metz as they make their way home. Very often, they engage in reckless behavior, crossing the road while the pedestrian signal is still red while holding a smartphone or talking to a friend. The city considers these locations especially at risk of traffic incidents.

INCREASED DANGER FOR PEDESTRIANS

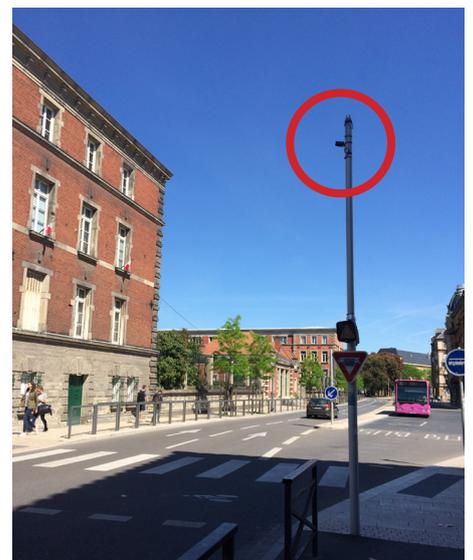
Metz is not alone. It's careless behavior we all know too well. Pedestrians do not always feel the need to wait until the red pedestrian light turns to green, so they just take their chances and make the crossing, regardless. During counts in the center of Metz, no less than 56 percent of pedestrians crossed during a red light.

The traffic situation in Metz seems to follow a recent trend in France of an increasing number of road deaths since 2014. In 2016, France's national road safety body (ONISR) reported an increase of 15 percent in the number of pedestrian casualties compared to 2015. For cyclist casualties, ONISR reported an increase of 7 percent compared to 2010.

FIXED INTERVALS ARE INEFFICIENT

Reckless behavior is one thing. Unadapted traffic infrastructure is another. In Metz, most pedestrian traffic lights have fixed green and red time intervals, primarily related to the crossing distance that needs to be covered. Unfortunately, these traffic lights do not take into account the number of people crossing the road. The result is that many school children have yet to leave the zebra crossing at the moment that vehicle traffic receives a green light, which results in very risky situations.

FLIR TrafiOne is an all-round detection sensor for traffic monitoring and dynamic traffic signal control.



FLIR TrafiOne thermal cameras detect pedestrians waiting on the curbside and at the zebra crossing.



Metz city authorities installed FLIR sensors at two strategic locations with an enhanced risk of traffic incidents.

On the other hand, an increasing number of pedestrians decide not to wait for green and make the crossing during a red phase, sometimes leaving motorists waiting for an empty zebra crossing, needlessly interrupting the traffic flow.

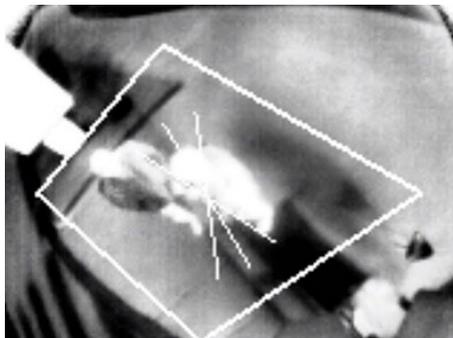
DYNAMIC TRAFFIC LIGHTS

The city of Metz, in collaboration with the French Center for Studies and Expertise on Risks, Environment, Mobility, and Urban and Country planning (Cerema), decided to set up two pilot sites, at strategic locations in the city that have a lot of pedestrian traffic from school children.

The experiment included the installation of FLIR TrafiOne thermal cameras that are able to detect pedestrians waiting on the curbside and at the zebra crossing. Instead of fixed traffic light intervals, red and green times can now be activated dynamically, based on the detected presence of pedestrians. In contrast to conventional cameras, thermal cameras do not see light, but detect the heat coming off the environment and pedestrians. Thermal cameras therefore make a very reliable detection technology, in light and dark conditions, and in any weather type.

In addition, the FLIR TrafiOne pedestrian cameras also take into account occupancy information, which allows green times to be adapted dynamically, in accordance with the number of people waiting on the curb. Three threshold occupancy values have been defined: 40, 65 and 85 percent, each of which will provide a different amount of green time.

“Dynamic green times will also result in smoother traffic flows and, therefore, less frustration for motorists,” says Mario Pinto, regional manager at FLIR Systems. “For this experiment, the city of Metz has chosen to give pedestrians priority, but it’s also important to find a good trade-off between pedestrian safety and not interrupting the traffic flow. At any rate, this is an ideal solution for enhancing pedestrian safety in the vicinity of schools.”



FLIR TrafiOne includes a visual and a thermal sensor and is able to collect pedestrian occupancy information.

SMART CITY SENSOR

TrafiOne is a compact, all-round thermal sensor that is capable of detecting vehicles, cyclists and pedestrians. FLIR TrafiOne can be connected to the traffic signal controller via dry contact outputs or TCP/IP network communication.

In the setup at Boulevard Paixhans and Place du Roi-George, three TrafiOne units have been installed on each location: two units monitoring the pedestrian occupancy on the sidewalk and one unit monitoring the actual crossing. The TrafiOne units are very easy to set up and installers can configure up to eight detection zones per unit.

COST-EFFECTIVE INSTALLATION

“With this project, we wanted to ensure the safety of pedestrians in difficult traffic conditions without significantly degrading vehicle traffic,” says Dominique Loesch, Traffic Control Engineer at Metz Metropol. “Our current real-time traffic regulation system already makes it possible to optimize journey times, control traffic congestion and divide the space for different modes of transport. However, our safety installations are quite costly. FLIR’s TrafiOne sensor, on the other hand, allows us to increase the safety on our pedestrian crossings in a much more cost-efficient way. In the case of the Boulevard Paixhans in Metz, the installation of TrafiOne sensors is ten times cheaper than a complete remodeling, with very efficient performance.”

For more information about thermal imaging cameras or about this application, please visit:

www.flir.com/traffic

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