APPLICATION NOTE – Traffic

FLIR PEDESTRIAN SENSORS REDUCE VEHICLE IDLING IN THE NETHERLANDS

Haarlemmermeer, Netherlands is using thermal detection sensors from FLIR to improve the efficiency of pedestrian push buttons at signalized intersections for smoother traffic, less vehicle idling, and fewer frustrated motorists.

Push-button cross signals are reliable ways for pedestrians to cross intersections and roads safely. However, there is one major drawback: once a button is pressed, these systems will cycle through to a green "Walk" signal whether or not pedestrians are present.

This becomes a problem when pedestrians press crosswalk buttons, only to jaywalk before the green walk signal appears. By the time the signal finally turns green, the pedestrians are long gone, but vehicle traffic must still stop and wait for the automated cycle to finish, even though the crosswalk is empty.

This is a problem the city of Haarlemmermeer, Netherlands faced. City officials noticed that many of the inner-city traffic delays were caused by jaywalkers and needless pedestrian green calls. This interrupted vehicle flow and increased air pollution due to increased vehicle idling time. City officials turned to FLIR Intelligent Transportation Systems for help.

REDUCING FRUSTRATION AND CONGESTION

The city recently decided to install around 150 FLIR detection sensors to detect pedestrians at crosswalks and to confirm push button requests for green. If the sensor sees the pedestrian leaving, and nobody else is present, it will cancel the call for green.

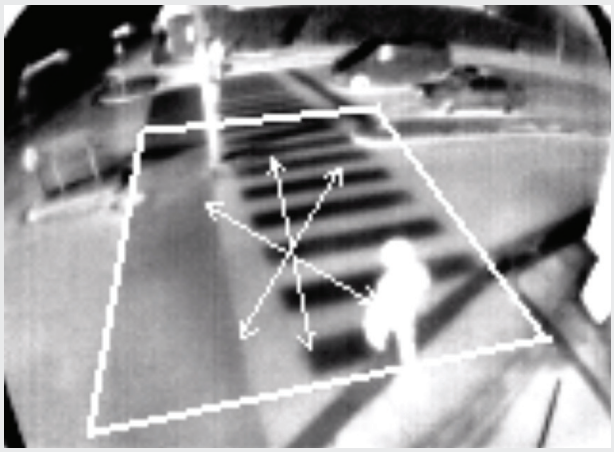
"Pedestrians will take risks to avoid delays," said Gaby Steenhoven, Haarlemmermeer's manager of Traffic Light Control. "We see it all the time. People push the button, look around and cross regardless of whether the call for green has been activated. This is very frustrating for motorists and increases congestion in our streets. With a call cancellation approach, we are hoping to make signalization in our city more efficient."

THERMAL PEDESTRIAN SENSOR

Haarlemmermeer opted for the FLIR TrafiOne, an all-in-one sensor for traffic monitoring and dynamic traffic signal control. With this sensor, the city can adapt traffic signal timings based on the presence detection of pedestrians, even in total darkness or adverse weather.

"We have been using FLIR pedestrian sensors to confirm the presence of pedestrians and the call for green for some time now, and it is working really well," said Steenhoven. "With the TrafiOne sensors, the city has been able to make a significant impact on traffic capacity, and the number of complaints about traffic congestion has been reduced, as well."

Impatient pedestrians who press for a green walk signal, only to jaywalk before it appears, can force vehicles to stop and wait at empty crosswalks.



The TrafiOne thermal imaging sensor detects pedestrians and cyclists based on their temperature signatures.

FLIR®

WORKING DAY AND NIGHT

A thermal imaging sensor can detect pedestrians and cyclists based on their temperature signatures. These sensors do not need any street lighting whatsoever to work properly and they cannot be blinded by direct sunlight. As a result, thermal imaging cameras provide uninterrupted, 24-hour detection of pedestrians and bicyclists, regardless of the amount of light available.

A study by the UK Department for Transport[1] has shown that when curbside detection was used at signalized crossroads with an all-red pedestrian stage, 32 percent of pedestrian demands were canceled.

"We started working with FLIR because we wanted a reliable system," said Steenhoven. "We have tried many different solutions for pedestrian detection, but with FLIR we are sure that the system is working and keeps working, day and night."

FLIR TrafiOne sensors can help cancel unneeded calls for green crosswalk signals if they detect that pedestrians are no longer present.

[1]Puffin Behavioral Study, Department for Transport, PROJECT UG336, 2007

For more information about thermal imaging cameras or about this application please visit : www.FLIR.com/traffic

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