The *TranLIVE Spotlight* is a bi-weekly update from the University Transportation Center research collaboration led by the University of Idaho

February 9, 2015

A HIGH-SPEED TRAPEZOID IMAGE SENSOR DESIGN FOR CONTINUOUS TRAFFIC MONITORING AT SIGNALIZED INTERSECTION APPROACHES

MOSCOW, Idaho – Dr. Suat Ay, a TranLIVE researcher at the University of Idaho's National Institute for Advanced Transportation Technology (NIATT), has made substantial headway in the field of intelligent traffic detection technology with the development of an image sensor integrated circuit containing a trapezoid pixel array and camera system that is capable of intelligent future extractions.

According to Dr. Ay, most video detection systems currently used in traffic signal applications are unable to provide the continuous traffic detection and monitoring necessary to carry out advanced traffic control functions. These camera sensors use fixed pixel, array sizes, and frame rates which are not optimal for fast and intuitive information gathering.

To remedy this issue, Dr. Ay designed a new scaled pixel array type image sensor, called trapezoid or TZOID and tested it along with two image processing algorithms developed for detecting vehicles coming to an intersection while extracting their speed and location information.

The developed image sensor consumes lower power, requires lower communication bandwidth and local memory while processing captured images with higher frame rates. This reduces the overall cost and complexity of the monitoring system while providing intelligent and continuous incoming traffic information to reduce vehicle emissions and fuel consumption.

While the results from this research proved successful, further testing needs to be done before it can be fully utilized in real-world intelligent traffic monitoring.

The complete report is available at: bit.ly/**tranlive020915**