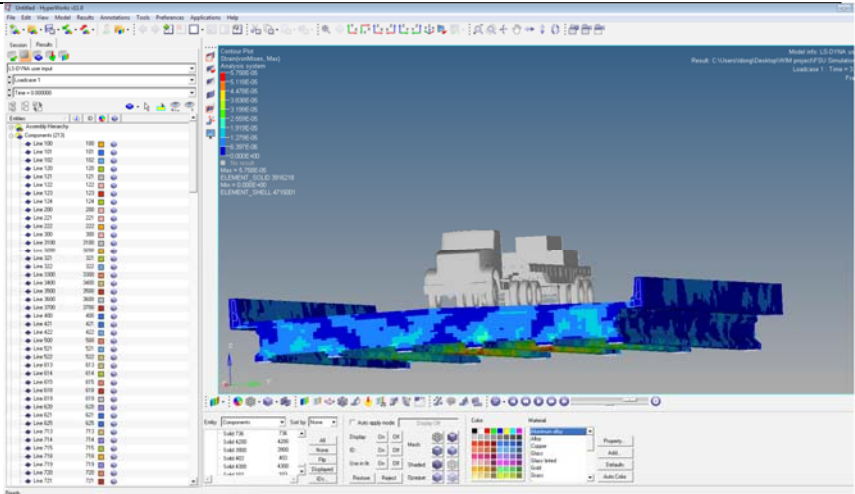


Project Information Form

Project Title	Next-Generation Wireless Bridge Weigh-in-Motion (WIM) System Integrated with Nondestructive Evaluation (NDE) Capability for Transportation Infrastructure Safety
University	Georgia Institute of Technology, University of Alabama at Birmingham
Principal Investigator	Yang Wang, Nasim Uddin, Laurence J. Jacobs, Jin-Yeon Kim
PI Contact Information	Dr. Yang Wang School of Civil and Environmental Engineering Georgia Institute of Technology 790 Atlantic Drive Atlanta, GA 30332-0355 Phone: (404) 894-1851, FAX: (404) 894-2278 Email: yang.wang@ce.gatech.edu
Funding Source(s) and Amounts Provided (by each agency or organization)	\$177,949 (GDOT) + \$ 244,562 (UTC) + \$109,075 (ALDOT)
Total Project Cost	\$313,436
Agency ID or Contract Number	DTRT12GUTC12
Start and End Dates	05/01/12 ~ 08/15/14
Brief Description of Research Project	This proposal seeks to develop a wireless WIM+NDE system as a solution to the premature transportation infrastructure safety problem, for the first time ever, in a two-fold approach: control of overloaded trucks and safety assessment/monitoring of transportation infrastructure. The system contains individual wireless sensing nodes that integrate state-of-the-art shear strain sensors suitable for concrete bridge components, and ultrasonic nondestructive evaluation (NDE) devices suitable for steel components.
Describe Implementation of Research Outcomes (or why not implemented) (Attach Any Photos)	<ul style="list-style-type: none">• Using the case study of US-78 Bridge, the proposed MFI algorithm demonstrates a potential tool in identifying axle loads of moving heavy vehicles which can be the basis for a highly accurate BWIM system.



- A compact wireless sensing device named Martlet has been implemented for a variety of bridge sensing applications, including acceleration, strain, and ultrasonic measurements.



Impacts/Benefits of Implementation (actual, not anticipated)

- The proposed system can be employed for enforcement prescreening and control of oversized and overweight vehicles to prevent the existing bridges from deteriorated damage.
- The wireless sensing devices can provide dense measurements on bridge structures regarding structural safety.

Web Links

- Reports
- Project website

<http://nctspm.gatech.edu/pi/next-generation-wireless-bridge-weight-motion-wim-system-integrated-nondestructive-evaluation-nde>