UTC Project Information	
Project Title	Guaranteed LiDAR-aided Multi-object Tracking at Road Intersections
University	Purdue University
Principal Investigator	Dr. Andrew Tarko
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Funding Source(s) and Amounts Provided (by each agency or organization)	$100,000: NEXTRANS Center/USDOT $100,000: JTRP/INDOT
Total Project Cost	$200,000
Agency ID or Contract Number	DTRT12-G-UTC05
Start and End Dates	01/01/2015
Brief Description of Research Project	A Traffic Scanner (TScan) is being developed with the joint pool of NEXTRANS's and INDOT/JTRP's funds to enable collecting accurate microscopic traffic data at road intersections with an innovative use of Light Detection and Ranging (LiDAR) 3D laser scanning technology. LiDAR sensing promises to overcome certain limitations of video cameras because it yields 3D point clouds that have a one-one correspondence with the environment being sensed. The current effort is focused on developing elements of the LiDAR's tracking algorithm with self-calibration and adjustment for the sensor's motion. The results of the current project show that LiDAR calibration and tracking with clear statistical guarantees are possible. The guarantees are functions of the characteristics of the sensor itself: its resolution, and precision. We expect that our sensing system will work in a variety of environments and will produce results of a uniform quality. The proposed second phase will be focused on developing algorithms for object identification, classification, and tracking.
Describe Implementation of Research Outcomes (or why	

not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • Reports • Project website	