



CENTER FOR CONNECTED AND AUTOMATED TRANSPORTATION

Project Title	Development of A Cooperative Perception System	
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Most relevant CCAT research thrusts (choose all applicable)	<input checked="" type="checkbox"/> Control & Operations <input checked="" type="checkbox"/> Enabling Technology <input type="checkbox"/> Human Factors <input checked="" type="checkbox"/> Infrastructure Design & Management <input checked="" type="checkbox"/> Modeling & Implementation <input type="checkbox"/> Policy & Planning	
Funding Request	\$100,00	
Matching Funds and Source (if any)	\$100,000 from Joint Transportation Research Program (INDOT), Purdue Department Start-up funds, and Purdue faculty discretionary funds	
Total Project Cost	\$200,000	
Contract Number	69A3551747105	
Project start/end dates	04/01/2022 — 03/31/2023	
Project Abstract	<p>In this project, we propose to develop a cooperative sensing and perception system with roadside sensors and connected and automated vehicles (CAVs). The Traffic Scanner (TScan) system, which is a Lidar-based roadside perception system mounted on a trailer or a van, will be integrated with a Level 4 autonomous vehicle (AV) to exchange and fuse perception information through wireless communications. The proposed cooperative perception system augments the perception capability of CAV onboard sensors with the information from a roadside system to greatly improve the safety and navigation of CAV under challenging driving scenarios that include (1) roadway temporary blockage by construction equipment, trucks, etc.,</p>	





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	inside work zones, and (2) frequent occlusions and interactions among vehicles in dense traffic at intersections.
High-level implementation plan	We will implement the proposed system at Purdue campus with a CAV and the TScan system.
Project Metrics	A working prototype of the proposed cooperative perception system; Papers published in nationally and internationally renowned conferences and journals.
Web Links: [leave blank until project approval]	https://purdue.edu/discoverypark/cav/nextrans/index.php

