



CENTER FOR CONNECTED AND AUTOMATED TRANSPORTATION

Project Title	Development of an Integrated Augmented Reality Testing Environment and Implementation at the American Center for Mobility	
PI (Up to 2)	Henry Liu	
Telephone #	734-647-4796	
E-mail:	henryliu@umich.edu	
Institution:	University of Michigan	
Department:	CEE	
Industry or Government Principal, organization, and contact information	Reuben Sarkar, American Center for Mobility, reuben.sarkar@acmwillowrun.org	
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	\$ 150,000	
Matching Funds and Source (if any)	\$50,000 in-kind contribution from American Cener for Mobility	
Total Project Cost	\$ 200,000	
Contract Number	69A3551747105	
Project start/end dates	01/01/2021 – 06/30/2022	
Project Abstract	<p>In this project, we will develop an integrated solution for autonomous vehicle testing, in which the naturalistic adversarial driving environment (NADE) will be integrated with augmented reality (AR) testing system. The integrated solution will be implemented at American Center for Mobility (ACM). With the AR techniques, the real testing AVs can be tested at a test track and interact with the virtual background vehicles. With the NADE, the maneuvers of the virtual background vehicles will be generated purposely, in that most of the maneuvers are generated from naturalistic driving data, and only at selected moments, selected vehicles execute adversarial moves to challenge the AVs. With the proposed system, the testing miles in the ACM test track can be converted approximately into equivalent mileage with public roads. Both the NADE and the AR system were developed by the PI research team with previous CCAT-sponsored projects.</p>	
High-level implementation plan	We will implement the proposed system at American Center for Mobility.	
Project Metrics		
Web Links:	ccat.umtri.umich.edu	



[leave blank until project approval]	
--------------------------------------	--