



October 3, 2023

College of Engineering

The Honorable Pete Buttigieg
Secretary of Transportation
U.S. Department of Transportation
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Secretary Buttigieg,

The Ohio State University (OSU) College of Engineering, through its Center for Automotive Research and CARMEN+ University Transportation Center, a UTC Center of Excellence on PNT, is pleased to commit support to the Mid-Ohio Regional Planning Council (MORPC) for the SMART Grant Program Proposal "PNT Resiliency for Vehicles in GPS degraded environments."

OSU has deep expertise in navigation resiliency and security of highly automated transportation systems. The demonstration of a vehicular system that provides GPS equivalent functionality amidst GPS cyberthreats and interference (particularly in urban areas) will deliver a valuable bed of knowledge to further the safety of connected and autonomous vehicles. This demonstration builds on previous work conducted by OSU and CARMEN+ around autonomous vehicle safety.

The OSU campus will serve as a prototype for urban testing of vehicle positioning accuracy resilience and provide a physical location on the campus in an urban area. OSU will work to utilize the assets proposed in this project with both existing and future research programs, further exploring and demonstrating the capabilities of terrestrial-based PNT.

The testing of a terrestrial-based PNT technology will undoubtedly provide knowledge that will improve safety in connected vehicles, specifically in urban areas where GPS is inaccurate and unreliable and vulnerable to cyberthreats, ensuring that resilient systems are properly tested, advanced, and ready for deployment.

If this project is funded, it will provide broad benefits that support Federal goals around safety and technology innovation and advance the safe operation of autonomous vehicles. All outcomes from this initial planning phase will be aligned with the 2023 DOT Complementary PNT Action Plan (specifically around evaluating, enhancing, and implementing PNT solutions in GNSS denied or challenging environments) and align with the Mid-Ohio Regional Planning Commission's Vision Zero Action Plan to eliminate traffic-related fatalities and injuries. This will also build upon the greater Columbus region as a hub to further accelerate the future of transportation and vehicle autonomy with an emphasis on safety and resilience, furthering the growth of the market of sustainable businesses.

Thank you in advance for your consideration of this application.

Sincerely,

Giorgio Rizzoni
The Ford Motor Company Chair in Electromechanical Systems
Director and Senior Fellow, Center for Automotive Research