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RESEARCH REPORT

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SAE EDGE™ Research Reports provide state-of-the-art and state-of-the-industry examinations of the most significant topics in mobility engineering. SAE EDGE™ contributors are experts from research, academia, and industry who have come together to explore and define the most critical advancements, challenges, and future direction in areas such as vehicle automation, unmanned aircraft, Internet of Things and connectivity, cybersecurity, advanced propulsion, and advanced manufacturing.

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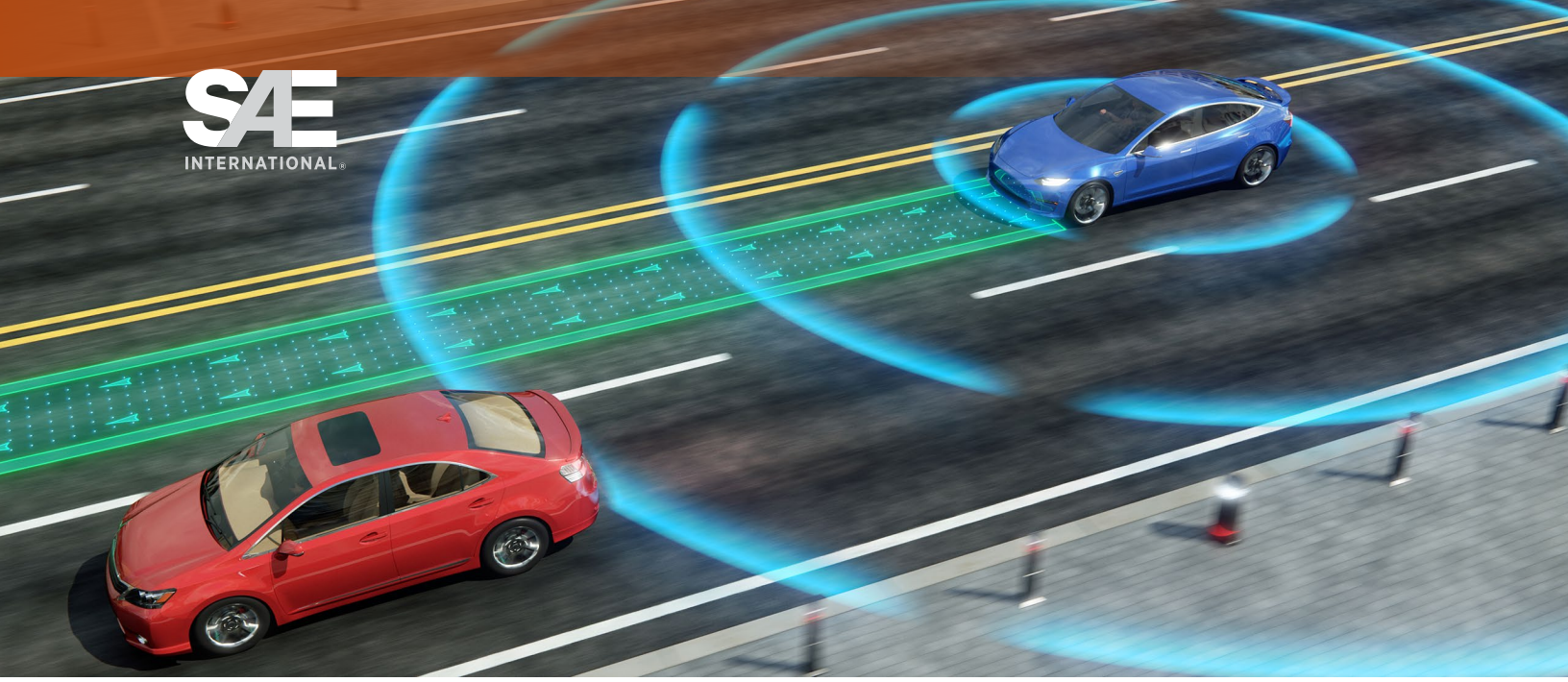
About the Editor

Bob McQueen is an internationally recognized expert in the application of advanced technology to transportation. He has provided expert-level consulting advice to central and local governments in the Middle East, Asia-Pacific, Europe, and North America. He has also advised global companies when entering or improving positioning in the market for advanced transportation solutions. McQueen specializes in the concise communication of complex technology concepts, matching user needs to technology capabilities and constraints. McQueen has had the privilege of gaining in-depth experience in technology planning, interactive requirements analysis, international standardization, and the application of big data and analytics. He is Chief Executive Officer for Bob McQueen and Associates, based in Orlando, Florida.

contents



Unsettled Topics Concerning the Field Testing of Automated Driving Systems

Abstract

Automated driving systems (ADS) have the potential to revolutionize transportation. Through the automation of driver functions in the application of advanced technology within the vehicle, significant improvements can be made to safety, efficiency, user experience, and the preservation of the environment. According to the US Department of Transportation [1], there are more than 1,400 cars, trucks, buses, and other vehicles being tested by more than 80 companies across the USA. Implementation of ADS technology is well advanced, with many sites across the USA incorporating automated vehicles (AVs) into wider programs to apply advanced technology to transportation. Discussions with the public sector's implementing agencies suggest that one of the barriers to faster progress lies in the lack of consistent and standardized field-testing protocols. This report looks at the state of the art of field testing for ADS and identifies areas for improved consistency and standardization. It will define the problem to be addressed by AVs and the challenges associated with the introduction of such vehicles and open-road situations. In particular, the report will look at the possibilities for big data and analytics to enable the sharing of lessons learned and convergence on standard field-testing approaches.

NOTE: SAE EDGE™ Research Reports are intended to identify and illuminate key issues in emerging, but still unsettled, technologies of interest to the mobility industry. The goal of SAE EDGE™ Research Reports is to stimulate discussion and work in the hope of promoting and speeding resolution of identified issues. SAE EDGE™ Research Reports are not intended to resolve the issues they identify or close any topic to further scrutiny.

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