

How A Precise E-Motor Emulator Speeds Up Inverter Software Development And Release Testing

SPEAKERS



Matt Hortop

Managing Director, shareholder, and co-founder of AVL SET

As an entrepreneur he brought testing methodology and technology from the aerospace industry to automotive power electronics. He has founded and co-founded three companies. Before he started his own business in 1993, he was active in the aerospace industry with system design of various commercial aircraft systems including flight controls. Horst received his Dipl.Ing from the University of applied sciences, Ulm and the Plymouth Polytechnic/GB, where he wrote his diploma thesis.



Horst Hammerer

Senior Technical Specialist for Electrification at AVL.

With more than 25 years of experience with electrified and alternative powertrains and 16 years of experience with major automakers in the field of electrified powertrain, Matthew brings a wealth of knowledge and expertise to his role. He holds multiple patents, patent applications, and inventive memos. Matthew received both a Master of Science and Bachelor of Science degree in Electrical Engineering from Michigan Technological University.

ABSTRACT

The development and validation of software and functional safety requirements of drive inverters is becoming increasingly intricate. As the number of electric vehicle programs increase, so does the demand for inverter testing and validation.

The historical method of performing inverter development on a dynamometer is failing to scale with the increases in activity and features. Without introspection, this leads many organizations to try to buy more and more dynamometers and search out more and more highly trained engineers to sit at the control desks to follow the historical development plans. That results in more capital investment and a large challenge building a team to get to the status quo of inverter development circa 2012.

AVL takes a different approach by implementing an e-motor emulator (EME). With exceptional fidelity emulation capabilities, it becomes possible to disconnect the development efforts from the need to have physical motors. This can be used to speed up historical development plans. In addition many organizations are using the unique capabilities of an EME to re-design their development plans to be shorter, require lower cost of test assets, and are provide a level of quality that was not feasible with rotating machines present.

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AVL is one of the world's leading mobility technology companies for development, simulation and testing in the automotive industry, and beyond. The company provides concepts, solutions and methodologies in fields like vehicle development and integration, e-mobility, automated and connected mobility (ADAS/AD), and software for a greener, safer, better world of mobility.

Contact Us:

www.avl.com
marketing.pt@avl.com

