

AVL



ADVANCED E-DRIVE CALIBRATION

Speed up your e-motor and inverter calibration

THE CHALLENGE

An optimized calibration of e-motor and inverter is essential for optimizing the electric range of vehicles. Currently, the multi-parameter optimization is roughly pre-calibrated in simulation followed by many manual iterative calibration loops on the e-drive testbed.

THE AVL SOLUTION

AVL developed a toolchain for highly efficient and accurate testing, calibration and validation of e-drive components (e-motor and inverter) on the testbed.

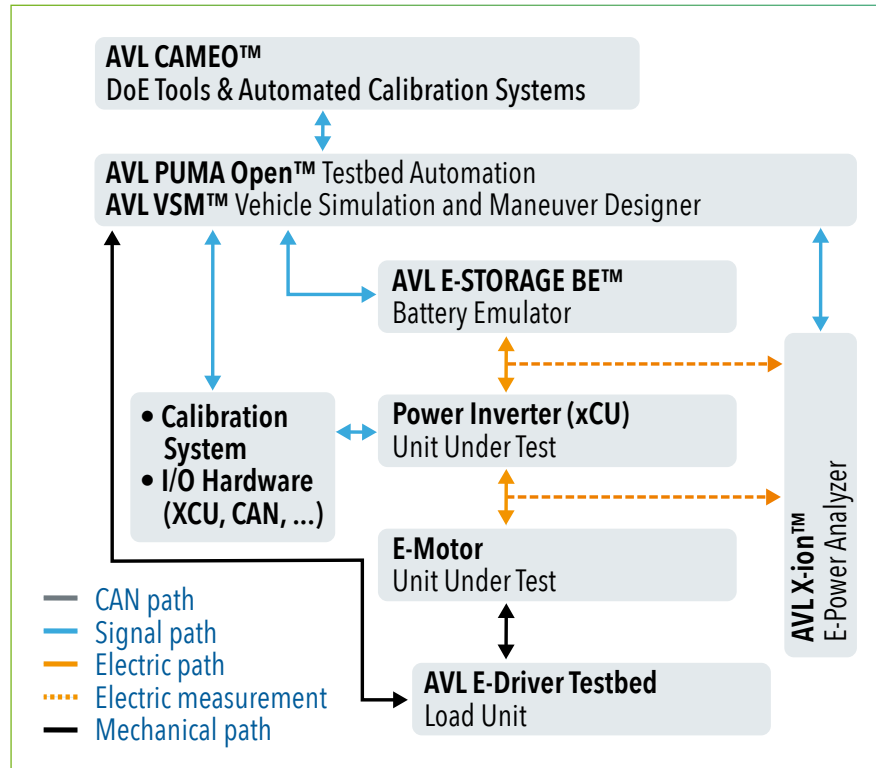
Via combination of state-of-the-art methods like active DoE with electrification specific testing components like battery emulator and fast electrified power analysis on a modern e-drive test system the efficiency of the calibration process could be significantly increased.

THE ADDED VALUE

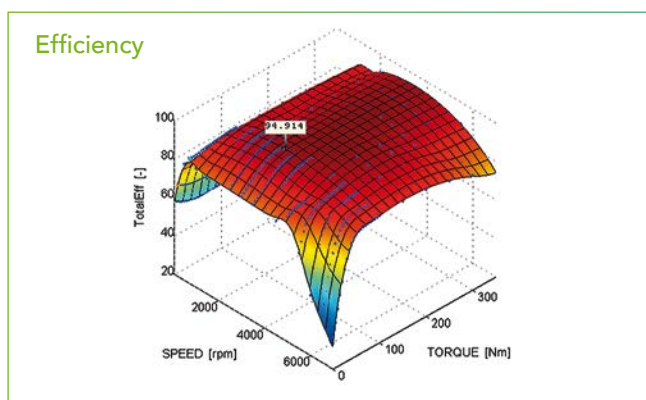
- High repeatability due to synchronized measurement results ensured by a seamless integration of all devices and software solutions on the testbed
- Plausible efficiency measurement and calibration in short measurement times based on 2 MHz raw data sampling and online evaluations in synchronized time windows
- Up to 60 % time reduction in calibration process (compared to manual approach) via optimized automation sequence in combination with active DoE methodologies (autonomous testing 24/7)
- Higher traceability of calibration results via multi-parameter optimization in the whole operating range

SOLUTION OVERVIEW

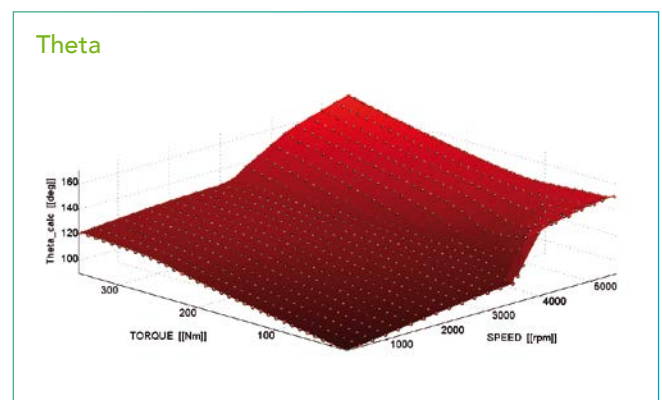
Advanced E-Drive Calibration Toolchain



EXAMPLES FOR CALIBRATION RESULTS



Optimized e-drive efficiency map



Optimized e-drive theta map

FIND OUT MORE:

AVL List GmbH, Hans-List-Platz 1, 8020 Graz, Austria
Phone: +43 316 787-0, fax: +43 316 787-400, email: iodp@avl.com, www.avl.com