

HiSpeed Ltd.: Accelerating e-Drive Validation with Sumac and Sumac Agent

Introduction

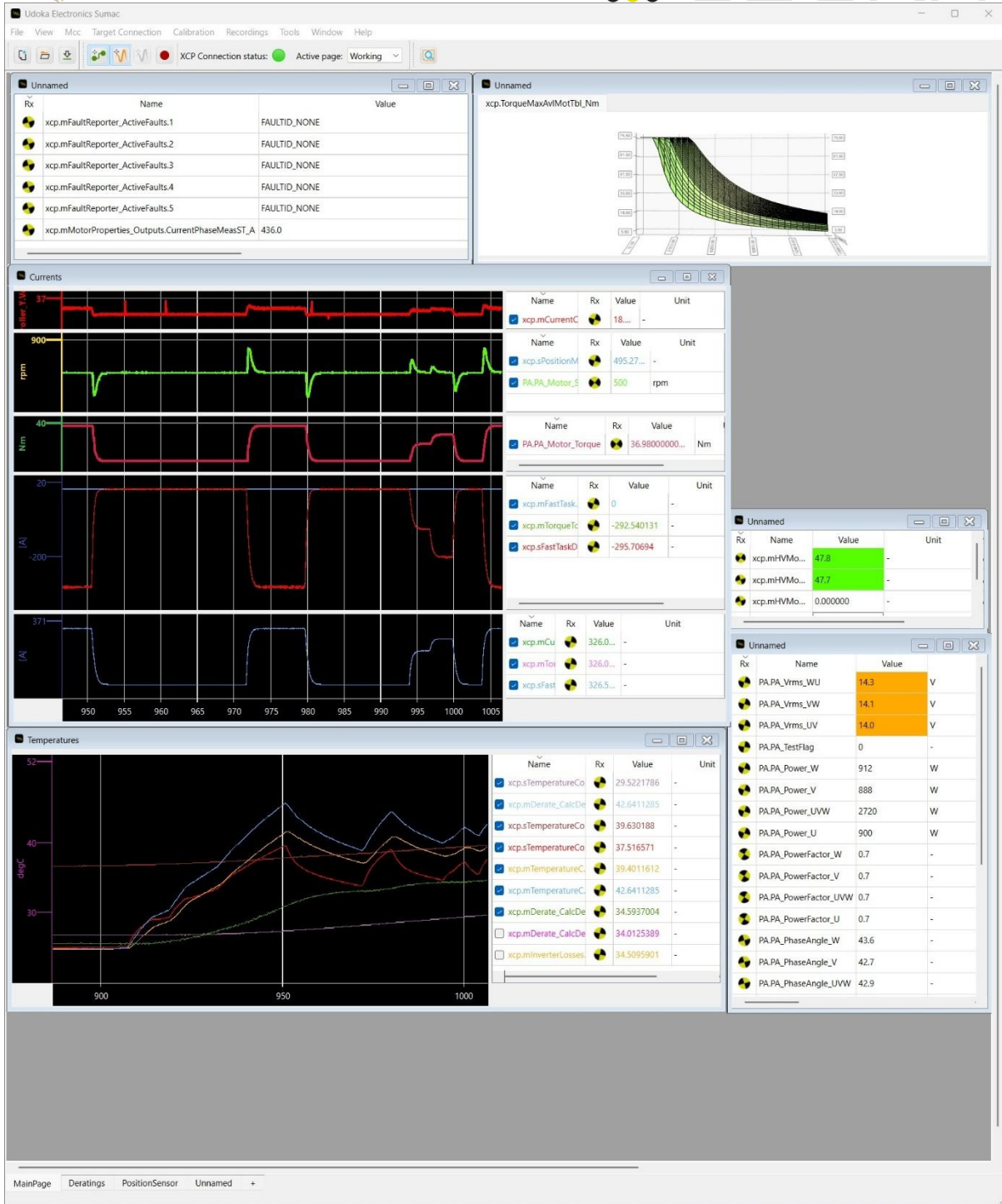
HiSpeed Ltd. is a leading innovator in electric propulsion, engineering highly efficient drive units for automotive, aerospace and robotics applications from its advanced design and testing base at Bicester Heritage, Oxfordshire. With a mission to deliver highly efficient, scalable and sustainable electric drivetrain solutions without compromise on speed, HiSpeed Ltd. faces rigorous demands to validate and optimize best-in-class motors, inverters and drives for rapid prototyping and commercial deployment.

Challenge

As HiSpeed Ltd. pushed the boundaries of electric drive performance and efficiency, its compact engineering team must handle increasingly complex validation tasks with maximum efficiency including large volumes of real-time calibration and measurement data. Every project phase, from design and prototyping to industrialization, requires precise control of calibration data, version tracking, and performance validation under strict timelines. Managing large volumes of real-time measurement and calibration data manually made these processes time-consuming and prone to error, creating the risk of late-stage rework or suboptimal system integration. To maintain its best-in-class development speed, HiSpeed Ltd. required tools that could streamline and automate these workflows without compromising technical rigor.

Solution: Sumac and Sumac Agent Integration

To address these needs, HiSpeed Ltd. integrated UDOKA Electronics' Sumac and Sumac Agent into their e-Drive development and validation workflow, linking critical calibration, data acquisition, and validation steps directly to project milestones. Sumac offered intuitive calibration database management, allowing engineers to automate the creation and merging of settings for diverse hardware platforms. Sumac Agent extended this capability, enabling seamless communication between embedded controllers and testing software, thus simplifying the real-time acquisition and calibration of parameters during motor, inverter and drive testing. An example of Sumac in action is shown in the screenshot below.

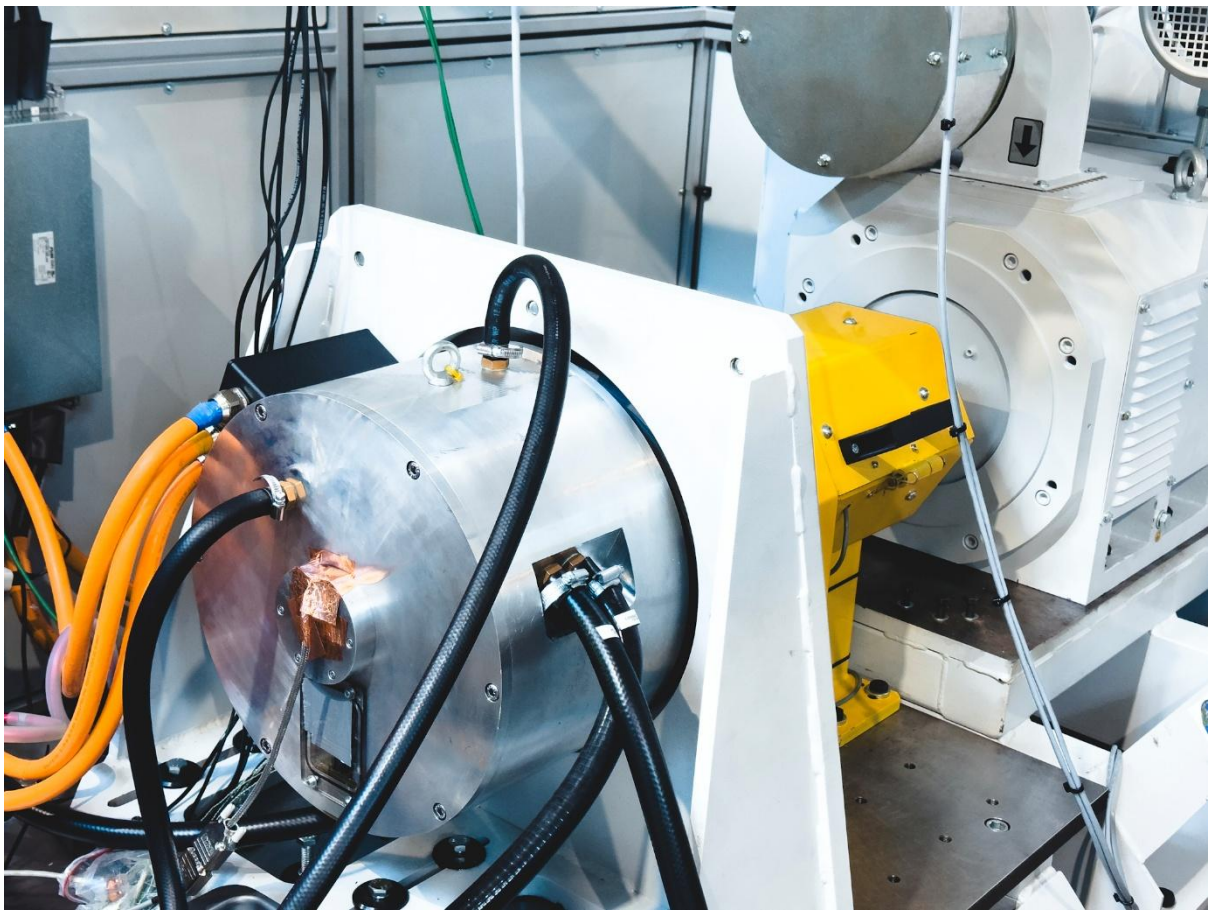


Implementation

HiSpeed Ltd. deployed Sumac and Sumac Agent across its hardware-in-the-loop test benches, integrating them with existing motor and inverter controllers, in-house validation procedures, and third-party data acquisition systems. Engineers could now

measure and adjust signals on live systems, quickly visualizing performance characteristics and applying calibration changes with a single click. Data logs and calibration files generated by Sumac were automatically appended to test records, supporting both rapid troubleshooting and full traceability for compliance and future reference.

Using Sumac's user-friendly interface, teams configured new test cases and validation routines in hours rather than days. The platform's support for high-frequency signal logging and bulk data export enabled more thorough analysis and faster iteration on system optimization, especially during A-sample and B-sample prototype evaluations, as well as in full endurance testing for final products in test rig, shown below.



Integration

The integration of Sumac and Sumac Agent resulted in measurable productivity gains at HiSpeed Ltd. Manual overhead was drastically reduced, freeing engineering resources for higher-value creative work. Test cycles were completed faster, enabling shorter time-to-market for new electric drive solutions. Data consistency and reliability improved, with single-source calibration databases and complete audit trails for design changes



and test outcomes. HiSpeed Ltd. engineers reported earlier identification of issues thanks to real-time measurement and calibration, leading to better system optimization and fewer post-deployment adjustments.

Conclusion

By integrating UDOKA Electronics' Sumac and Sumac Agent, HiSpeed Ltd. has strengthened its approach to electric drive testing and validation, aligning engineering efficiency with the company's vision for excellence in e-drive technology. The automated toolchain now supports faster iteration, consistent calibration management and full traceability, allowing HiSpeed Ltd. to deliver scalable, sustainable, and high-performance electric drive units and meet the demands of the modern mobility landscape

[Learn more about Sumac and how this tool can help you with calibration, measurement and visualization of embedded control systems or ECUs >>](#)