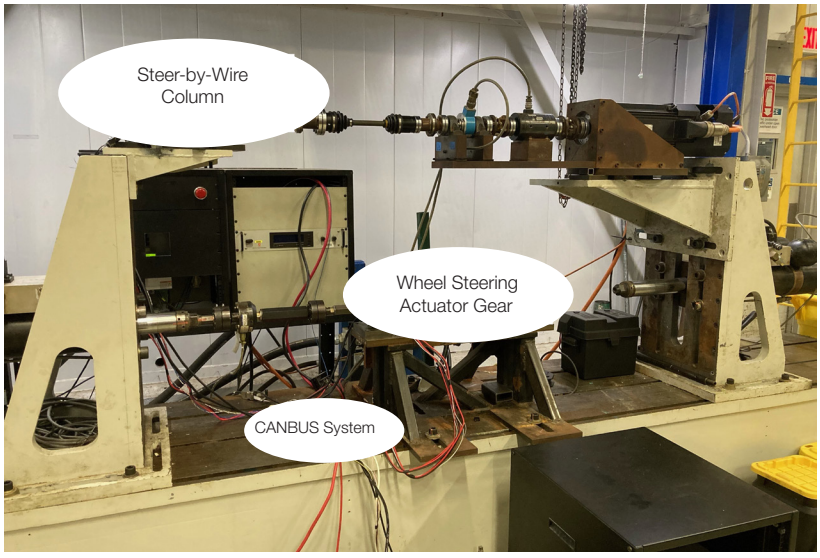
How our Contract Testing Services Team Resolved Complex Steer-by-Wire and Rear-Wheel Steering Durability and Functional Performance Testing Challenges for a Major OEM



Creative use of SPARC closed loop controller and STARS Test Automation System to combine the CANBUS signals and test rig sensors to subject two steering systems.

Electronic power assisted steering (EPAS) has largely replaced hydraulic power assist systems because it is more efficient to run and saves on overall vehicle weight. We have supported OEMs and Tier 1/Tier 2 suppliers for many years in various development phases of their EPAS platforms with comprehensive testing services, but advances in EPAS technology and steering mechanics have changed the industry's testing needs.

Recently, a large OEM and long-time EPAS testing customer came to our contract testing team in Troy, Michigan with a challenge. Two of their advanced steering systems required durability and functional performance testing to validate their design and production phases. These systems did not use conventional steering mechanics; in other words, a steering wheel physically connected to the steering gear. Instead, the EPAS system used a CANBUS controller. Without a mechanical steering system, steering for the rear-wheel steering system was handled solely through CANBUS. For the steer-by-wire application, there was a physical steering column, but no mechanical connection to the steering gear. In that case, steering was accomplished by physically turning the steering column, which was connected by a wire to the CANBUS.

Testing these systems required extensive experience and knowledge, especially when applying control techniques to manage the CANBUS. At the same time, the test rig equipment had to apply different physical parameters and mechanically test the steering system.

The solution? Our Contract Test Team used a SPARC closed loop controller and STARS Test Automation System to combine all the CANBUS signals, and test rig sensors to properly subject the two steering systems to the required tests.

Testing steer-by-wire and rear-wheel steering systems requires extensive experience and knowledge, especially when applying control techniques to manage the CANBUS.