Press release

Karlsruhe, Germany, September 17, 2015

Earlier testing for steering systems

IPG Automotive's steering test bench eliminates the need for complete vehicle prototypes

As electronics and their interconnection within vehicles become ever more complex, and the range of variants grows, the volume of tests, costs and time required during the development process increase dramatically. By combining test systems and virtual test driving, individual components and systems can be optimized early on at all stages of the development process. IPG Automotive's steering test bench combined with the open integration and test platform CarMaker offers the optimal solution, enabling the volume of required tests to be managed and boosting the efficiency of adjusting, testing and validating real steering system components.

With IPG Automotive's steering test bench, steering system components can be comprehensively tested at an early stage. The test bench has a flexible design and can be adapted to different customer-specific steering systems in just a short space of time. All of the test bench's actuators can be controlled separately. In combination with the sensors and the CarMaker simulation environment, the bench creates a control loop that allows steering maneuvers to be shown in a reproducible, realistic manner and the steering system behavior and steering feel to be tested. Thanks to virtual test driving, maneuver catalogues can be automatically and reproducibly tested – even to the limits of driving dynamics – by using the IPGDriver model.

Two electrical linear actuators allow for particularly precise control, permitting closed-loop testing to be carried out with IPG Automotive's steering test bench. During this testing process, input values such as steering angle, steering torque and steering rod power are generated by the CarMaker simulation platform and fed into the EPS steering system. Suitable sensors such as power, torque, angle or position sensors then feed the signals back into the vehicle dynamics simulation. As in IPG Automotive's steering test bench, software and hardware come from a single source, it provides an optimum balance and minimizes latency times.

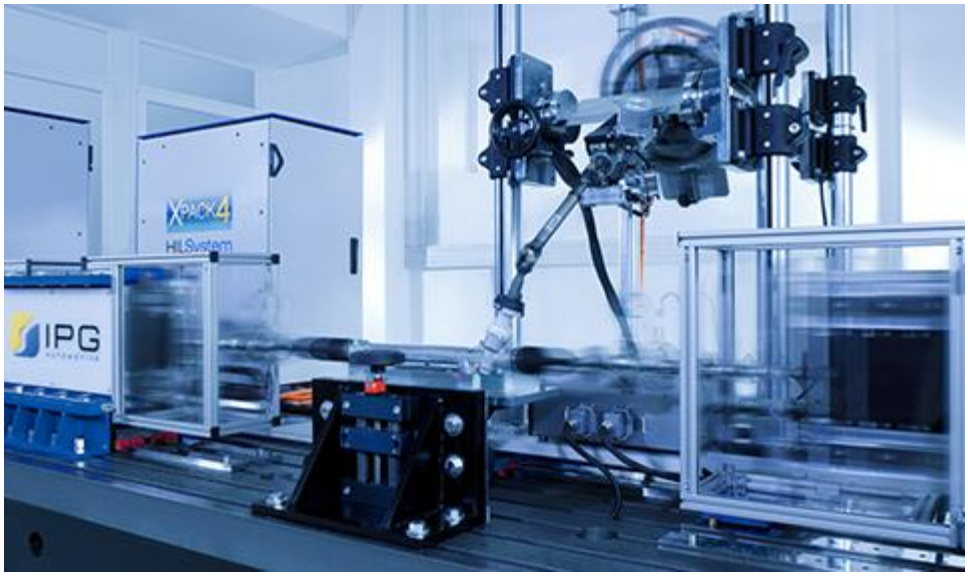

Figure 1: IPG Automotive's steering test bench

The steering test bench is used to optimize, as well as to secure and approve, steering system components. This enables fail-safe tests, benchmark tests, steering feel adjustments or approval tests, for example, to be carried out. Even in light of the increased use of advanced driver assistance systems and the resulting high volume of steering interventions, such as lane departure warning systems or parking assist systems, the steering test bench increases efficiency during development.

The first steering test benches have already been successfully delivered to customers all around the world. IPG Automotive's steering test benches are already facilitating and supporting the development process for large automotive manufacturers and university research facilities alike.

A video of IPG Automotive's steering test bench can be found on YouTube:
https://www.youtube.com/watch?v=Iln8Tlf14Hw

IPG Automotive GmbH

As an innovation driver for virtual test driving, the company is a leading global provider of software and hardware products for the automotive and supplier industry. With the areas Simulation Software**,** Real-time Hardware, Test Systems and Engineering Services, IPG Automotive supports its customers in creating innovations and shaping their development process efficiently.

The innovative solutions CarMaker, TruckMaker, and MotorcycleMaker, as open integration and test platforms, facilitate great savings in time and cost for customers, in a continuous development process of Model-, Software- and Hardware-in-the-Loop, all the way to the Vehicle-in-the-Loop method. The application ranges from the vehicle dynamics simulation, developing and testing of chassis control systems, to interconnected systems such as chassis, powertrain and steering.
One of the biggest strengths of IPG Automotive is the integration and testing of all kinds of advanced driver assistance systems within IPG's future-oriented solutions.

Your editorial contact

Katharina Brömel | IPG Automotive GmbH | Tel.: +49 721 98520-39 | Email: katharina.broemel@ipg.de
Press area: http://ipg.de/en/news/press/