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Services

Full trialing for vehicles of tomorrow

By Mario Knop, Director Competence Center, Formel D Group

New propulsion technologies, lightweight designs, optimized consumption demands, the sophisticated comfort requirements of final consumers and the introduction of extended assistance systems – these are just a few of the topics which are now affecting development processes more and more. These subjects are also having an increasing effect on the complexity of the test scenarios to be mapped and the data involved. As a service provider operating globally in the field of product development, Formel D performs test and validation drives or operates entire test centers on behalf of its customers.



Mario Knop

is Director Competence Center for the Formel D Group. He and his team develop uniform quality standards and help the operative units worldwide to implement them when initiating projects in the field of vehicle testing.

At the beginning of a vehicle series is a prototype equipped with all technological innovations of the future automobile. During the development process, the propulsion concepts and software configurations undergo test drives on different routes, test stands and public roads, where experts subject them to intensive testing for safety and functionality.

The model in question does not go into series production until the quality meets the demands of consumers and legislators.

Know-how – a one-stop solution

It is often more economical or necessary from a technical point of view for manufacturers to outsource entire sub-processes of vehicle trialing. Formel D is at its customers' side as a competent contact here, and in conjunction with the OEM it develops a strategy ranging from the establishment of a center and the necessary logistics to the definition of routes and scenarios. Then, a team of specially trained test drivers performs the actual trial runs and documents them, while a

second team evaluates the results. The services are performed in one- to three-shift operation depending on the requirements. This offers customers flexibility and enables the Formel D employees to work proactively, even if there are fluctuations in capacity utilization.

The automobiles to be trialed reflect the current state of development in each case, and their technical components, characteristics and design are not yet known to the public. In test drives on public roads, therefore, the Formel D experts ensure the complete camouflage of the prototype before installing the necessary measurement technology and sensors. In the time- and kilometer-based tests, a

permanent team of specially trained test drivers guarantees a reproducible driving style. In accordance with the specified deployment scenarios and the scope of trialing, they drive the models at different loading conditions, in some cases with a trailer attached. Besides the predefined test parameters, the Formel D experts also regularly examine other functions and features in the vehicle by subjecting them to above-average use. Finally, the experts document the mileages achieved, the fuel or energy consumption and the necessary refills of operating materials in each shift, the wear and tear values for the tires, and other data relevant for the assessment of each individual vehicle. This data is then transferred to the customer system.

Holistic testing services

The Group supports the execution of test drives and comparative tests as well as fleet management for various manufacturers. In this context, Formel D is in charge of the control and organization of trialing as a whole and of the test center as well as the workshops in three shifts operating seven days a week. The know-how of the team made up of test drivers and technical employees covers all fields of automotive development. First, the experts plan vehicle deployment. Here, they take into account the parameters that the customer specifies for each vehicle, such as mileage, deployment characteristics and scenarios as well as deadlines for the completion of trialing. It is a particular challenge here to prioritize the vehicles according to the objectives and to consistently compare the actual status with the target status. In its planning, Formel D also takes the regular downtimes for maintenance, wear-and-tear repairs and vehicle upgrades or unscheduled interruptions into account.

The test equipment itself is situated in an area of the testing ground which is cordoned off to protect the prototypes. On a road network screened from public view, the specially trained Formel D test drivers follow

predefined routes and instructions on artificial route profiles. These specifications are necessary in order to achieve reproducible results standardized in test drives. If the experts detect any abnormalities, they analyze the cause-effect relationships, localize the component causing the problems, describe the reason for the damage with all relevant influencing factors and transmit their findings to the customer. These include the data generated by the measuring equipment installed in the vehicles. Quality and depth of the analysis enable the development department to perform a technical assessment and adjust the design if necessary. In the course of the trialing projects, the customer provides new software and component states at short intervals. As the validity and assessability of the anomalies identified in trialing depend on how up-to-date the vehicles used are, the Formel D experts include new software states at short notice. In addition, they install upgraded parts and components and promptly remedy the wear and tear resulting from increasing mileage. After completion of each phase, Formel D hands the prototypes over to the manufacturer for further testing or dismantles vehicles and components itself for the purposes of further assessment.

Formel D is at its customers' side with individual and scalable solutions throughout the entire automotive value chain. Even in the early stages of model development, the company provides high-quality services to support manufacturers. A well-trained and reliable team of experts with detailed knowledge of the industry ensures that the Formel D standards will meet the highest possible requirements in the future too. ■

Website

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Company Profile

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About Faurecia

Faurecia is one of the world's largest automotive equipment suppliers, with three key business groups: Seating, Interiors and Clean Mobility. As a global leader in the industry and with its unique positioning, Faurecia's clear strategy is to focus on developing technologies for sustainable mobility and smart life on board. In 2017, among others the company has been awarded with the Industriepreis, the German Design Award and the AutomotiveINNOVATIONS-Award.

Facts and figures

In 2016, the Faurecia Group posted sales of € 18.7 billion. As of December 31, 2016, Faurecia employed 100,000 people in 35 countries at 300 sites (including 30 R&D centres). Faurecia is listed on the NYSE Euronext Paris stock exchange and trades in the U.S. over-the-counter (OTC) market.

Products

As one of the world's leading automotive suppliers, Faurecia provides all market segments and model versions worldwide with products of the Business Groups Seating, Interiors and Clean Mobility – from compact to premium-class cars. Among its customers are Audi, BMW, Ford, Renault-Nissan, Peugeot, Porsche and Volkswagen.

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