

### **FCA Automotive Research & Development Centre Houses DiM250, Most Advanced Driving Simulator in North America**

*New technology offers the driver a customized virtual immersion that replicates the ride and handling of a specific vehicle on a multitude of simulated road surfaces and driving environments*

**Windsor, Ontario, October 2, 2019** – The FCA Automotive Research and Development Centre (ARDC) inaugurated a new Vehicle Dynamics Simulator (VDS) lab recently, featuring the most advanced driving simulator technology available in North America: with nine degrees of freedom and specific driver calibration, the new DiM250 simulator by VI-grade closely duplicates the actual driving experience.

The new VDS is cutting-edge technology that emulates a vehicle's driving dynamics in a real time, virtual environment. This technology offers the driver a customized virtual immersion that replicates the ride and handling of a specific vehicle on a multitude of simulated road surfaces and driving environments.

Most driving simulators make use of six actuators to deliver basic body motion. However, to accurately reproduce vehicle ride, handling and acceleration characteristics, the VDS system uses nine actuators to create the full range of motion of an actual vehicle.

A notable feature of the new VDS is a very thin cushion of air, which floats the entire motion platform above the floor like a hovercraft, allowing for a quiet and seamless motion via the electric actuators.

The new simulator has the ability to add subsystems such as brake and steering, ABS (Anti-lock Brake System) and ESC (Electronic Stability Control) controllers to create a hardware in the loop test to better meet functional targets. This strategy helps reduce product development times and lower project validation costs.

"The ability to simulate a drive experience with Hardware-in-the-Loop is key to the engineering efforts of our customers and assists in identifying design changes much earlier in the development process," said Guido Bairati, VP Sales and Marketing, VI-grade. "By using our simulators, our customers can create a virtual testing environment to assess the ride and handling of a vehicle, perform tests and validation on sensor technology for Advanced Driver Assistance Systems (ADAS) applications, evaluate different Human

Machine Interface (HMI) configurations, and test for driver distraction and distraction remedies.”

The simulator can be fitted with any vehicle body, road and environment. To create a visual experience on the five projector screens, data is collected by scanning the environment and roads, such as FCA’s proving grounds in Chelsea, Michigan. The data is then integrated to create a real-time virtual environment that includes elevation changes, off-camber roads and potholes.

Initially, the VDS will be used to support Chassis Vehicle Dynamics, but in the future will be used to support development of ADAS and HMI systems.

### **About VI-grade**

VI-grade is the leading provider of best-in-class software products and services for advanced applications in the field of system-level simulation. Along with a network of selected partners, VI-grade also provides revolutionary turnkey solutions for static and dynamic driving simulation.

Established in 2005, VI-grade delivers innovative solutions for streamlining the development process from concept to sign-off in the transportation industry, and there mainly in the automotive, aerospace, motorcycle, motorsports and railway sectors. With its office locations in Germany, Switzerland, Italy, UK, Japan, China, and the USA and a worldwide channel network of more than 20 trusted partners, VI-grade is a dynamic and growing company with a highly skilled technical team.

Since September 2018, VI-grade has been part of Spectris. Spectris is an FTSE 250 listed global conglomerate with 2017 sales of over \$2B and 9,800 employees. The firm conducts business in four major segments - materials analysis, testing & measurement, in-line instrumentation and industrial controls - and serves a broad range of industries ranging from automotive and aerospace to electronics, energy, mining and pharmaceuticals.

For further information about VI-grade, please visit <http://www.vi-grade.com>.



FCA Automotive uses VI-grade's DiM250 simulator for the recently opened Vehicle Dynamics Simulator (VDS) lab in Ontario, Canada.

Additional information and news from FCA US LLC is available at <http://media.fcanorthamerica.com>.

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