



# VMC<sup>®</sup> Web Services – Cloud-Based Analysis of Vehicle Data

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The collection of usage data plays an important role in many areas. In the automotive industry, for example, it helps to determine relevant driving conditions or to record energy consumption. The VMC<sup>®</sup> Web Services developed at the Fraunhofer ITWM are available to interested vehicle manufacturers and fleet operators in order to utilize the data in a meaningful way. Thanks to highly automated, data-driven analysis options, they provide an important additional building block in the value chain of vehicle development.

One focus of our “Dynamics, Loads and Environmental Data” department is on modeling the usage variability of vehicles while taking environmental data into account. They developed the versatile software and service package VMC<sup>®</sup> (“Virtual Measurement Campaign”). It supports vehicle manufacturers in gaining deeper insights into vehicle stress and use and extrapolating measurement data to the entire life of the vehicle.

real usage data with the derivation of specific customer models and supports vehicle manufacturers in integrating this information into their product development,” explains expert Thorsten Weyh. The web services correspond to the modules of the VMC<sup>®</sup> desktop software. However, the modules can be individually combined to realize highly automated, statistical evaluations for specific usage groups.

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Every vehicle collects data, every kilometer driven is recorded in real time – whether for cars or heavy trucks. This is information on how we use the vehicles, which routes we travel and much more. Vehicle manufacturers and fleet operators typically transfer this data to a cloud-based filing system, where it is available for comprehensive analysis. As the availability of vehicle data from ongoing operations increases, so do the possibilities for analysis.

## Another Building Block in Vehicle Engineering

“This is where our new tool – VMC<sup>®</sup> Web Services – comes in. It combines the collection of

## Extensive Functions

The new web services offer several advantages. It is now possible to create specific routes including potential stopovers, project routes on VMC<sup>®</sup> map material, evaluate routes according to road type, curvature or mountainousness and combine and simulate speed profiles for different vehicle, driver and traffic models. As a cloud-based online service, no costly and resource-intensive local IT infrastructure is required. The hardware requirements on the customer side are reduced to a minimum, thus enabling low-threshold access to the web services. In addition to the geo-referenced analysis options already mentioned, the services also provide information on consumption and emissions over the selected route.



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