



1st VMAP User Meeting 2024

INTEGRATION OF MEASUREMENT DATA INTO THE SIMULATION WORKFLOW FOR BLOW-MOLDED PLASTIC PARTS USING THE VMAP INTERFACE STANDARD

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Extrusion blow molding is the standard process for manufacturing hollow plastic parts. The product range extends from consumer and industrial packaging (bottles, canisters, IBCs) to complex technical parts such as vehicle tanks. The specific properties of the final products are closely linked to the manufacturing process and include local variations in wall thickness, fluctuating material properties and anisotropy.

In recent years, a sophisticated CAE workflow has been developed to predict the complex behaviour of blow molded components. This workflow integrates various simulation tools for both process and structural analysis and utilizes the VMAP Interface standard.

Recent developments in the VMAP standard now offer the possibility to incorporate measurement and sensor data into the CAE workflow. Consequently, the simulation results can be directly validated in comparison to actual measurements. At the same time, measurement results, such as the temperature distribution determined by thermography or the wall thickness distribution obtained by CT or 3D-Scanning, can serve as the basis for further simulation steps.