



SUCCESS STORY




European Vehicle Manufacturer Improves Data Management in Chassis Development

Reliable processes and enhanced efficiency in data management give chassis developers at a major European OEM the freedom to concentrate on what matters most: making sure that control systems are optimally tuned for a unique driving experience

THE OBJECTIVE: PERFECTLY TUNED DRIVING CHARACTERISTICS FOR EVERY VEHICLE VARIANT

Racing track performance and long-distance comfort: The engineers at the renowned OEM master this balancing act by integrating cutting-edge electronic control systems into a perfectly tuned mechanical chassis. Therefore, in the past years, pure passive systems were replaced by active and semi-active systems, such as active rear steering or electro-mechanical steering. Whether or not these technologies can reach their full potential within the vehicle depends a great deal on the way the control units are calibrated. The system behavior is exactly tuned to every available vehicle variant by establishing the optimal value for all control unit parameters. By doing so, every single vehicle version receives its very own electronics DNA – a tremendous effort for the vehicle manufacturer, which is known for offering a great diversity of variants.

FAST FACTS

Customer / Department	Major European OEM
Challenge	<ul style="list-style-type: none"> • Merge large volumes of calibration data • Bring calibrations for every vehicle variant safely to series maturity
Solution	 <ul style="list-style-type: none"> • Central management of calibration data with AVL CRETA™ • Rights management • Versioning and data history
Result	<ul style="list-style-type: none"> • Improved efficiency and process reliability in data management • Transparency and traceability of calibration results • Higher data quality



“WITH AVL Creta™ OUR CALIBRATION PROCESSES RUN SMOOTHLY – THIS GIVES US A QUALITY OF DATA WE CAN RELY ON COMPLETELY.”



The tuning of chassis control systems generates massive volumes of calibration data.

THE CHALLENGE: DATA FLOOD AND VARIANT DIVERSITY

In the course of development, massive volumes of calibration data are generated, and the engineers must ensure that only the best possible parameter settings find their way into the series vehicle. To this end, the work accomplished by the various calibration teams (each responsible for one control unit) is merged again and again. Trade-offs have to be made frequently, as certain parameter settings in interaction with the other control systems can easily produce conflicts. It is critical in such cases to keep track of things. “In the past, we managed our calibration data manually,” explained one of the development engineers. „Data used to be saved locally, for example, in Excel spreadsheets, and shared via e-mail. Data administration could get pretty time-consuming, and process reliability was not ensured.”

THE SOLUTION: AVL Creta™ – MORE THAN JUST A CENTRAL DATABASE

So as not to be swamped by data, the chassis developers decided to switch over to a professional calibration data management solution. Similar to their powertrain development colleagues, they now work with AVL Creta™, which satisfies their needs for fast, flexible and safe processes to the fullest extent. AVL Creta™ serves as a central platform, from which all team members draw their calibration data, and where they check in again after processing. As a result, the data are automatically subjected to versioning, and the engineers can see at one glance which parameter sets are incorporated into which variant. Upon their delivery, work results are automatically checked to prevent any incorrect or overlapping calibrations from being stored in the database.

THE RESULT: PROCESS RELIABILITY AND HIGH DATA QUALITY

AVL Creta™ supports the calibration process at this renowned OEM all the way from the very first calibration to the final go-ahead for series production. At the initial calibration, data-mining algorithms are applied to automatically generate new calibrations from already available datasets, so existing know-how is re-used with maximum efficiency. Subsequently, the calibration engineers’ responsibilities are defined, i.e. who is in charge of which label. Team members have global access to the data – regardless of whether they work at the testbed or on the proving ground. At defined points in time, the data manager merges the delivered results and checks the overall result. Any conflicts occurring, because different calibration teams require different optimal values, for example, are de-escalated and resolved. After that, the new data are released in AVL Creta™ for further processing. This ensures that all team members are always working with the very latest data version. “With AVL Creta™ our calibration processes run smoothly,” said one of the company’s development engineers. “This gives us a quality of data we can rely on completely.”

OUTLOOK: READY FOR CONNECTED VEHICLE SYSTEMS

Given the steady increase in automotive control system connectivity, interdisciplinary collaboration among calibration engineers is becoming more and more important. A current example of this is the renowned automotive manufacturer’s new all-wheel control unit that is calibrated jointly by drive system and chassis engineers. AVL Creta™ allows the teams to merge their work results at a central location. By making processes transparent and retraceable, use of the central data processing platform ensures efficiently and reliably that the interdisciplinary project is a success.

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FIND OUT MORE

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