



Success Story
AUTOMOTIVE

SWITCHING TO THE FAST LANE

A high velocity approach to
automotive testing using
serverless data-driven
application co-design

demicon.de

Find out how we helped our client, a German automotive company, deal with a large number of different data formats and tools to analyse vehicle test data. With new testing and analysis requirements, they needed to improve productivity and reduce the time taken to innovate their tool chain. To implement a bespoke data platform to support the analysis of vehicle test data, they turned to our experts at DEMICON, who have extensive experience in the automotive, cloud and data sectors.

INDUSTRY AUTOMOTIVE

CLIENT FAKT GMBH (GERMAN VEHICLE TESTING & ENGINEERING CENTER)

TOOLS AWS, TERRAFORM ENTERPRISE, AUTH0, GRAFANA, INFLUXDB

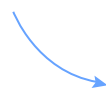
COMPETENCES OF DEMICON

- Extensive AWS, TERRAFORM, and SERVERLESS know-how
- Deep expertise in AI, data tools and techniques
- Certified specialists
- Vast experience in the automotive industry
- Strong analytical and methodological competence
- Customised solution approaches






“With DEMICON’s help, FAKT GmbH was able to improve automation and tooling to support vehicle testing – a critical step in ensuring speed, time-to-market and innovation in this highly competitive field.”

DAVID STEINBACH

SENIOR ENGINEER, DEMICON



BENEFITS FOR OUR CLIENT

-  Increase scalability by building on the AWS cloud platform
-  Improved collaboration between distributed testrun engineers
-  Cost savings through serverless infrastructure
-  Low barriers to entry thanks to generative AI
-  High velocity & innovation potential through co-design of serverless applications

STREAMLINE YOUR VEHICLE TESTING WITH SERVERLESS DATA-DRIVEN APPLICATIONS

BERLIN & STUTTGART, DEMICON

In the dynamic landscape of the automotive industry, where innovation is the key to success, the integration of cutting-edge technologies has become paramount. Vehicle testing is no exception. As part of a vehicle's development process, or as part of legally required vehicle approval processes based on EU legislation, test engineers carry out analyses such as 'emission and energy analysis' or 'noise, vibration and harshness analysis'. However, test engineers face increasing challenges.

While analysis procedures are changing rapidly due to new vehicle types, increased data volumes, new data formats and protocols, new collaboration and reporting requirements, test engineers are expected to deliver results more efficiently and in a more timely manner. To meet these demands, our customer was looking for a data-driven application to analyse test runs, while promoting flexibility and speed for rapid innovation.



By combining the expertise of DEMICON's Professional Services Data-Driven Development Team and the Vehicle Testing Team, we created a unique solution for our customer to enable even faster innovation cycles in vehicle testing. Specifically, our goal was to deliver an extensible custom data-driven application for vehicle test drive analysis, migrate existing data, dashboards and reports, and implement best practices and business processes to ensure timely future enhancements and customisations while maintaining high cost efficiency, performance and scalability.

The company was able to achieve these goals by leveraging DEMICON's expertise in custom data-driven applications, cloud technology, and AWS solutions.





THE PROJECT & ITS CHALLENGES

At the start of our collaboration, our customer primarily utilised local machines for data analysis, employing a diverse array of independent applications, tailor-made scripts, and spreadsheets. This approach presented notable hurdles in achieving optimal flexibility, collaboration, and scalability. It also slowed down the pace of introducing new features and posed challenges to innovating swiftly and efficiently.

Management's decision to expand the cloud was only the next logical step in order to foster collaboration among test engineers, quickly implement custom analytics, dynamically scale with changing storage and processing needs, reduce costs, and simplify communication with customers.

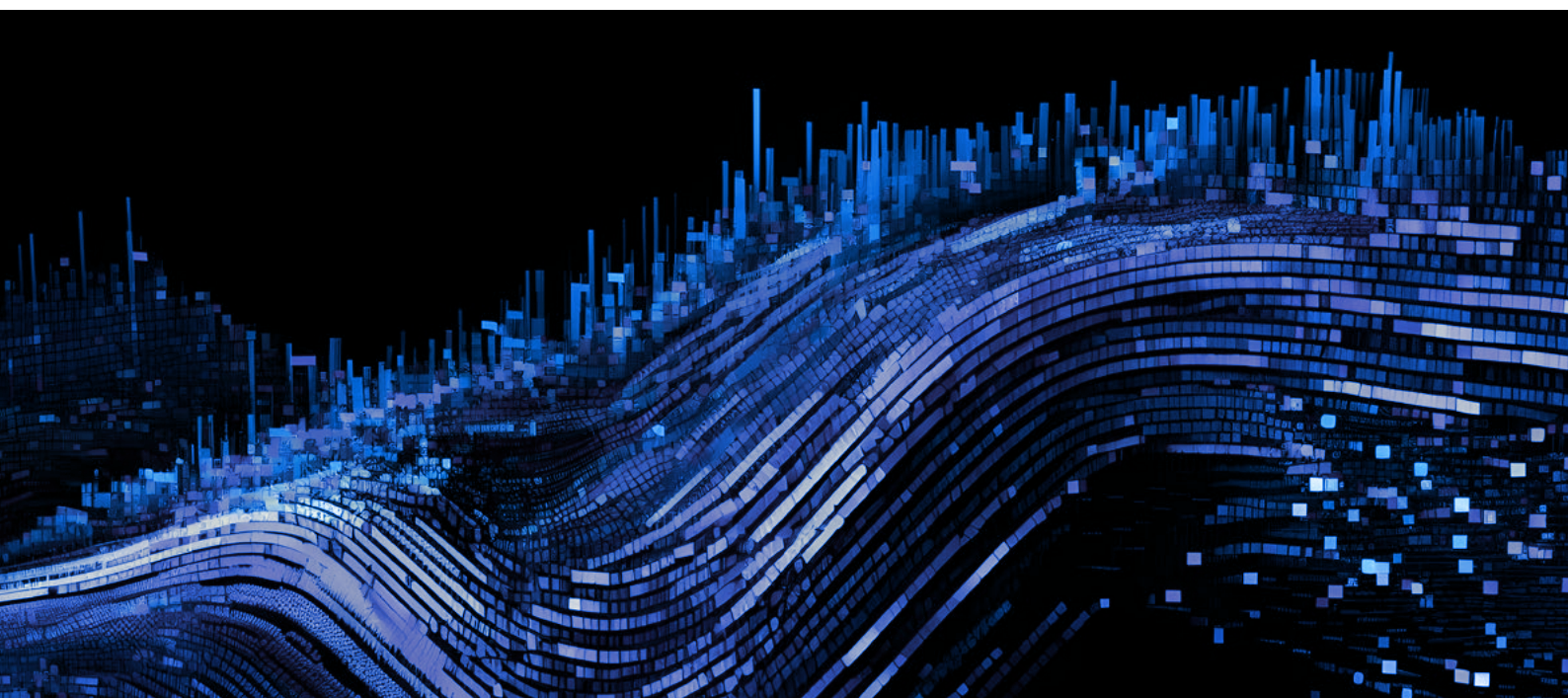
OUR CUSTOMER FACED THREE KEY CHALLENGES

Import, store, and export large volumes of heterogeneous test run data from multiple sources.

Perform computationally complex analysis in a fast, scalable, and cost-effective manner.

Implement custom test procedures in a timely manner in collaborative dashboards and reports.

Wanting to find a fast, yet sustainable and scalable way to solve the problem, the company's management approached DEMICON. With experienced experts in vehicle engineering, cloud platforms and data-driven applications, DEMICON was uniquely suited to help with these key challenges.





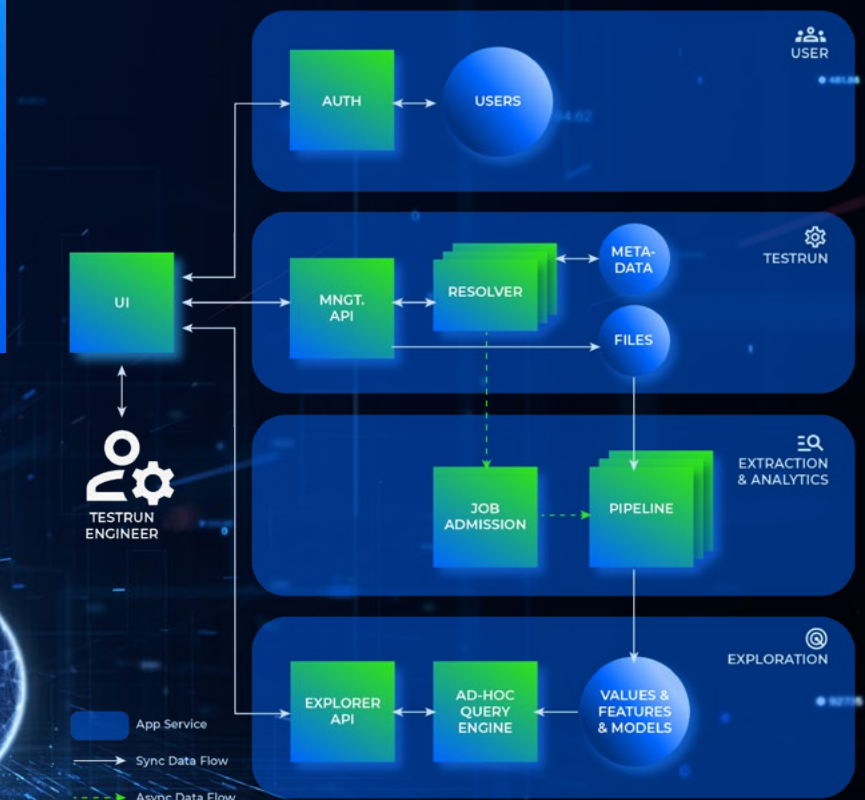
OUR APPROACH

During the evaluation phase, the DEMICON team gained an overview of the customer's existing requirements, data and tool landscape. Based on our assessment, the client decided early on on two key actions. Leverage a serverless cloud infrastructure as the foundation of the application. Embrace the concept of application co-design to enable both test engineers and cloud engineers to extend the functionality of the application in the future. Those strategic decisions laid a solid foundation for a successful project. Learn more about how these decisions impacted the project. Let's take a closer look at how these decisions affected the project.

WHY SERVERLESS COMPUTING?

By relying on serverless computing (see info box below), we reduce operational concerns for our customers to implement fundamental data analysis and processing logic in an agile and timely manner. In addition, the pay-as-you-go pricing model has helped reduce overall infrastructure costs for highly volatile test workloads. Furthermore, fully automated CI/CD pipelines allow software engineers to test features in their own exact replicas of the production environment, improving code quality while keeping infrastructure costs low. To increase security for our customer, we provided full automation capabilities to deploy the application to their AWS customer accounts.

Serverless computing defines a pay-as-you-go cloud execution model, where a cloud provider executes and auto-scales on behalf of a cloud consumer. Serverless suggests that you no longer have to worry about servers and infrastructure and instead can focus on business logic. That's why ServerLESS can be „MORE“ if developer expectations and cloud platform offerings are properly aligned.



High-level Application Architecture

WHY APPLICATION CO-DESIGN?

Data management solutions typically face a fundamental trade-off regarding the interface exposed to users. While low-code solutions provide low entry barriers for users and enable flexible exploration of data sets, they typically have severe limitations in terms of scalability and cost-effectiveness. In contrast, code-based solutions require software engineering expertise as they are more difficult to use and maintain, but allow for specialised requirements such as high scalability and performance.

To successfully solve this tradeoff in a desirable manner for our customer, we relied on the principle of data-driven application codesign. Through a low code solution, test engineers are able to **customise dashboards and reports** for timely customisation and exploration. In this respect, **Generative AI significantly lowers the entry barriers** for test engineers. At the same time, well-defined extension points make the **full power of the cloud accessible** to software engineers for computationally intensive analysis and optimisation needs. This has enabled our customer's test engineers to adopt a **design science-inspired approach** to explore and use new analytics as needed, and to evolve to more sophisticated solutions as data and usage increase, resulting in **unprecedented speed to meet new vehicle testing requirements**.



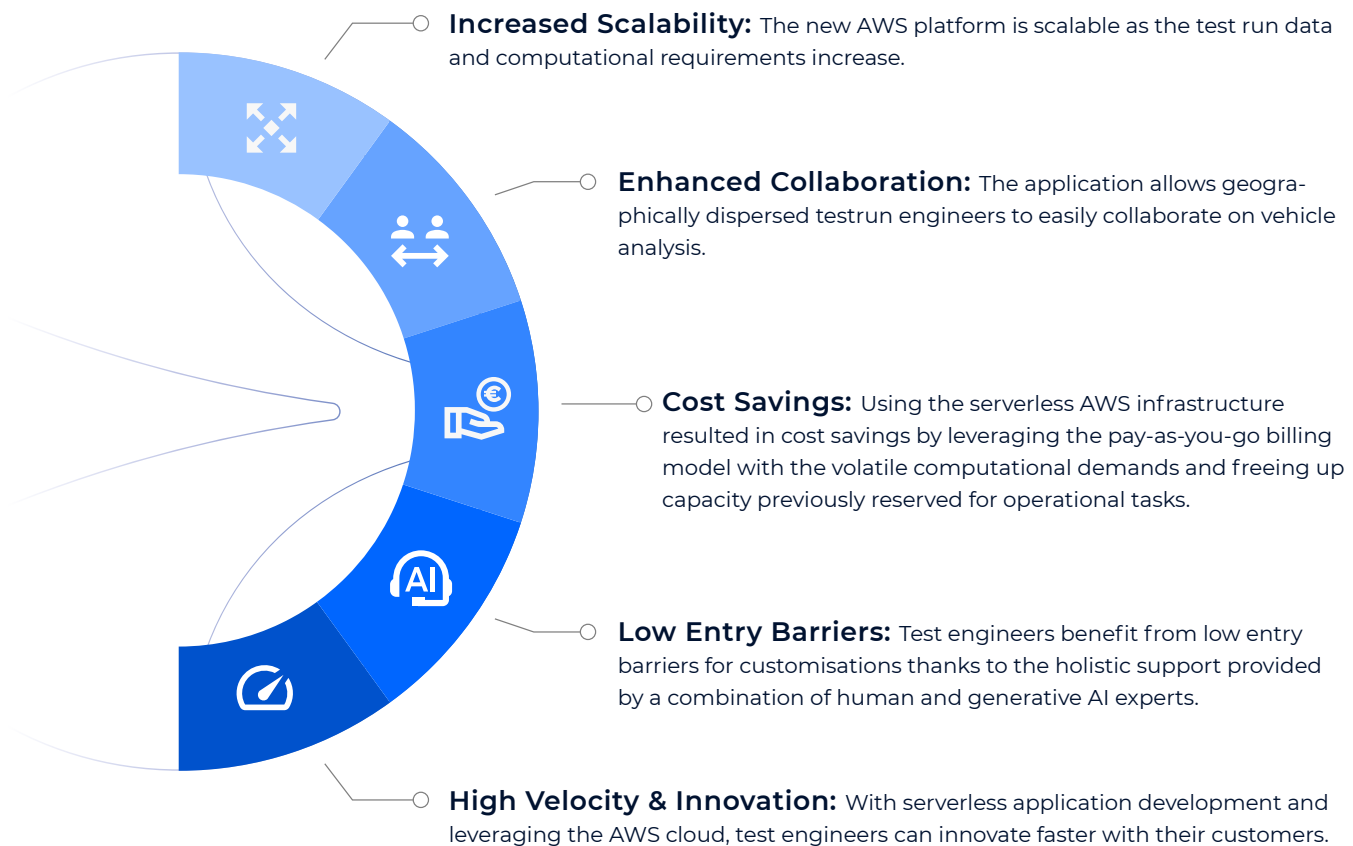
EQUIPPING YOU
WITH THE
FUTURE OF IT.

[TAKE A LOOK HOW](#)



THE BENEFITS – ALL WINS AT A GLANCE

The successful partnership between our customer and DEMICON has resulted in numerous benefits.





CONCLUSION

By combining tool expertise and methodological know-how, our experts at DEMICON created the optimal conditions for testrun engineers to innovate in a timely and collaborative manner. We were able to strike a balance between the freedom and flexibility of the cloud on the one hand, and corporate security policies and compliance requirements on the other, drawing on our many years of experience in the automotive industry.

We look forward to continuing to support our customers with world-class engineering for data-driven applications and cloud platforms, developing more specific solutions to help them tap into the full potential of the cloud and lay the foundation for continued business success.

Our priority is to provide our customers with exceptional data application engineering services and tailored solutions that maximise the benefits of the cloud and pave the way for new business success.

DEMICON is a multi-award winning IT service provider founded in 2008, and one of the leading AWS and Atlassian Platinum & Enterprise Solution Partners in the DACH market.

DEMICON has built a legacy based on deep technical expertise and strategic thinking, combined with a people-first approach. Our services range from customised software development and implementing scaled, agile methods, such as SAFe, to consulting on agile processes and hosting seminars and workshops.

Our team of experienced Enterprise Architects, Technical Consultants, Software Engineers, Business Consultants and Project Managers provide a wide range of solutions to help companies reach their digital goals.

TOGETHER WE WILL DESIGN
THE RIGHT SOLUTIONS FOR
YOUR VISION!



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