

CONSUMER PRODUCTS AND RETAIL AUTOMOTIVE AND TRANSPORTATION

SRAM

Applying software rather than developing it decreases testing analysis time by about 50 percent

Product

Simcenter

Business challenges

Increase efficacy and efficiency of testing process

Boost stability and reduce development time

Develop products that are safe for all bike applications

Keys to success

Work with Dipolo to implement Simcenter Testlab to reduce testing bottlenecks

Use Simcenter Testlab to focus on interpreting data rather than processing results

Extrapolate relevant data from the field in a targeted manner

Receive training from Dipolo experts to rapidly ramp up software use

Results

Decreased analysis computing time by about 50 percent by applying software rather than developing it

Gained flexibility and versatility in an end-to-end solution

Accurately calculated product damage cases

SRAM uses Simcenter Testlab to gain a flexible end-to-end solution for operational strength testing

Supporting the power of bicycles

Bicycle component manufacturer, SRAM Deutschland GmbH (SRAM), has been in business for over 30 years. Starting out with six employees in one office, it has become one of the largest bicycle component manufacturers in the world. SRAM has 16 worksites on six continents and over 5,000 employees with its headquarters in Chicago, Illinois and Schweinfurt, Germany.

The SRAM Development and Training Center in Schweinfurt is recognized as its mountain bike hotspot and one of the

largest SRAM sites in Europe. It specializes in mountain bike and road drivetrains and much more. This site designs and tests mountain bike and road drivetrain innovations. Accordingly, the engineers in Schweinfurt were responsible for developing the first precision ball bearing, ball bearing hub, the freewheel and now the SRAM Eagle™ and SRAM 1x™ drivetrain, which are redefining the potential of mountain bike drivetrains.

SRAM is also involved in humanitarian work, such as the SRAM Cycling Fund, which promotes bike riding as an environmentally friendly and healthy mobility solution. H. Moritz Rügamer, test engineer at SRAM, Schweinfurt, states, "We believe in the power of bicycles and want to inspire people to ride."





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H. Moritz Rügamer
Test Engineer
SRAM

Developing its own testing tool led to bottlenecks

SRAM must constantly meet new requirements and further develop processes. The company needed to optimize its testing process for efficacy and efficiency. Therefore, SRAM was searching for a flexible and versatile end-to-end solution so it had everything in one place.

Previously, SRAM had developed their own tool for testing and analyzing the durability of their bike components. Rügamer explains, “You don’t always have the time to write these programs yourself. Further, you should use the time you do have for developing the process or processes rather than for developing the tool.” SRAM needed a solution to increase flexibility, stability and reduce development time. This led the team to work with Dipolo, a Siemens Digital Industries Software solution partner, to optimize its testing process.

Dipolo worked with SRAM to implement Simcenter™ Testlab™ software in the field of fatigue strength, particularly for cassettes. The cassettes are the sprocket group on the rear wheel. SRAM has multiple design variants that differentiate in weight and performance. Simcenter Testlab is part of the Siemens Xcelerator business platform of software, hardware and services. The company was aiming to reduce the test time without negatively affecting the quality of the results. Dipolo worked to understand SRAM’s needs and goals for operational strength testing and presented the benefits of implementing Simcenter Testlab. SRAM’s goal was to make sure its products were safe for road and mountain bike and electric mountain bike applications.

Extrapolating relevant data

SRAM must make sure testing requirements meet customer requirements. As the market needs changed, SRAM needed to adjust to the new use cases that products were exposed to. One major trend in 2021 was the e-bike compatibility. SRAM

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H. Moritz Rügamer
Test Engineer
SRAM



wanted to make sure that customers were safe and felt safe when riding. With Simcenter Testlab, SRAM was able to perform faster and more complex calculations with data directly from the field.

With Simcenter Testlab, SRAM was able to work with new measurement setups and evaluation areas. "What Simcenter Testlab offers here is enormous. We like to work with various open-source code, which has mostly public libraries. I haven't found a comparable library that can match the scale Simcenter offers." Further, the ease of generating templates in Simcenter Testlab enabled the SRAM team to easily evaluate data. "You can press a few buttons and get a result," explains Rügamer.

Overall, SRAM was able to extrapolate the relevant data from the field in a targeted manner, which streamlined the process. The work became easier and was almost completed in real time because the computing time in Simcenter Testlab is relatively short.

Additionally, Dipolo experts have played a key role in getting the SRAM team up to speed on the software. "I was happy with the scope of the training and we work well together," says Rügamer. "We could also approach the head of Dipolo's training afterward if we had any issues. He was able to answer the questions well and offer effective solutions."

Saving time in the testing process

Implementing Simcenter Testlab enabled the SRAM team to save a significant amount of time because they could focus on applying the software rather than developing it. This enabled them to focus on interpreting the data versus processing results. They found the software to be faster, more flexible and stable than their prior solution. As a result, by using Simcenter Testlab the computing time for the analysis has decreased by about 50 percent compared to the in-house developed solution. The team also appreciated the efficiency of the software: "I was always fascinated by how well Simcenter could handle large amounts of data," says Rügamer.

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H. Moritz Rügamer
Test Engineer
SRAM



Solutions/services

Simcenter Testlab
[siemens.com/simcentertestlab](https://www.siemens.com/simcentertestlab)

Customer's primary business

Founded in 1987, SRAM relies on the foundation of creating a more fun, efficient and faster bicycle. Today, SRAM consists of a global team of people who have the passion for improving the experience and potential for the sport of cycling.
www.sram.com

Customer location

Schweinfurt
Germany

Solutions partner

Dipolo GmbH
www.dipolo-gmbh.de/en

The future of Simcenter at SRAM

The SRAM Schweinfurt team is considering how to implement Simcenter Testlab in the future. "Simcenter Testlab has brought us very far, very quickly," Rügamer says. "The Siemens solution offers many opportunities and it is valuable for us to share topics across our locations and internally to

expand knowledge." The SRAM team sees potential for other product groups in the company to benefit from using the software. The company's innovative strength is a great asset and is setting it up for continued growth.



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H. Moritz Rügamer
Test Engineer
SRAM, Schweinfurt

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