

# Collaborations on the Data Highway

Text WOLFGANG GOMOLL / Photo RENOVO



**Renovo CEO Chris Heiser likes to share. His software architecture is open to others. This generosity pays off—for mobility solutions of the future.**

The apple doesn't fall far from the tree, as the saying goes. In the case of Chris Heiser, the venerable dictum could hardly be more applicable. His father is an aircraft engineer and his mother a technician. "It's true. Tinkering and working with software are in my DNA," says the co-founder of the automotive start-up Renovo. Actually, as a youngster Christopher wanted to emulate his boyhood hero Tom Cruise in his favorite film, the fighter-pilot epic *Top Gun*, and become a jet pilot himself. "But then I realized how repetitive and regimented the work is," Heiser explains.

So instead of climbing into the cockpit of an F-16, he went to the lecture hall instead. In 1992, Chris Heiser enrolled at Carnegie Mellon

University, a highly regarded private institution in Pittsburgh, Pennsylvania, to pursue a degree in mechanical engineering. Heiser founded his first start-up while a student at CMU, where Lycos—the very first Web-crawling search engine—was being built. After graduating in 1996, the programming whiz continued his trailblazing ways, designing cell phones equipped with a camera as the top product manager at the Light-Surf company. "That changed the way people communicated with each other and paved the way for Facebook and Instagram," recalls Heiser.

The forty-four-year-old has founded six start-ups all told. He founded Renovo together with Jason Stinson in 2010 and based the company in Silicon Valley. There, he and his forty-

person team are hard at work on autonomous driving, and boast some prominent partnerships, including one with Stanford University, which also conducts research in the field. "It was only when we started working with Stanford that we realized that data management is the biggest challenge in automated driving. A few thousand automated cars in an urban setting like Manhattan generate more data in one day than Facebook does," says Chris Heiser, illustrating the magnitude of the task. The data that will initially make autonomous driving possible also bears tremendous potential for further commercial applications—and Renovo already has some customers lined up who want to work with it. "That will be the next big wave," predicts Heiser.

Renovo's approach for data management is the open software platform AWARE, which, like the Android and Linux operating systems, allows anyone who wishes to get involved. "We have no interest in owning the software solutions on our platform. What we want is to enable our customers and partners to offer their own software solutions," says Heiser. This type of open-source approach is also already established in the field of medical devices and aviation—both highly sensitive areas. The advantage? "That way we enable quicker innovations," says Heiser. Rather than a closed system and small computing units, Renovo relies on a software ecosystem currently comprised of dozens of partners.

AWARE can be integrated into different vehicles. The idea is that the customer will be able to choose from various software products with different functions to control the autonomous vehicle. The aim is to reach what is known as level 4 in the near future: for instance, autonomously driving the same route back and forth in a suburb at a relatively low speed. For this reason, Heiser prefers the term "automated driving," because the "action" is repeated over and over again. When will that be possible? "Now," says Heiser—the only question is where. Pilot projects are already underway. Little by little, he says, the technology will improve and become more common. Heiser compares it to the advances made in flight over a century ago: it began with little "hops" that were only possible in ideal weather—and now people can fly around the world.



#### Video

Visit at Renovo's start-up garage in Silicon Valley: [next25.de/EN/renovo](http://next25.de/EN/renovo)