Bela Gipp won the "Jugend forscht" competition with his "Cell Phone Guardian Angel" invention. Today, he is a professor, and his ideas continue to keep him ahead of his time.

Recorded by Doris Schneyink

I took part in Jugend forscht three times. The "Cell Phone Guardian Angel" project became my most well-known contribution. My goal was to improve the rescue of traffic accident victims. This also had a personal background. I knew someone who had died in a car crash. He had an accident on a country road at night, and the emergency personnel were notified far too late.
Together with two fellow students, I thought about how to shorten the time between an accident and an emergency call. I then had the idea of building an acceleration sensor into the cell phone, combined with a positioning system. The sensor detects the impact, and the cell phone automatically calls the emergency services. We developed all the electronics and software ourselves and were allowed to conduct crash tests at the ADAC. Even we were surprised by how reliably accidents, as well as false alarms, could be detected. We then sold our development to a company, but the time was not yet ripe for integrating this technology into all cell phones. At the end of the 1990s, for example, cell phones did not yet have GPS, and other measurement methods via the cellular network were inaccurate.

"eCall" as the Successor to his Invention of an Automated Emergency Call

Today, similar emergency call systems under the name "eCall" are required by law for all new cars. Our Jugend forscht project was even referred to during the EU legislative process regarding this safety feature – so I was a bit proud of that. Participating in Jugend forscht is a very valuable experience. I got in touch with the CEO of Infineon, who supported me with a scholarship. This enabled me to study at UC Berkeley in California.

As a doctoral student, I had an experience there that gave me another idea: I publicly posted a research project on the university website for which I hoped to find motivated students. Later, I found out that a start-up had plagiarized this very idea. Of course, I thought that was unfair, so I thought about how to better protect intellectual property. That's how I came up with the idea of a blockchain-based digital timestamping service.

I called it "OriginStamp" and made it available free of charge to other scientists, but also to journalists. The service can be used to prove that a certain piece of information already existed at a certain point in time. In this way, anyone can protect their digital intellectual property, texts, photos, videos, or defend themselves against unjustified accusations of plagiarism. The stamp cannot be manipulated, even by the best intelligence agencies.

A digital stamp developed by Bela Gipp before NTFs were all the rage

Subsequently, I founded a start-up that offers "OriginStamp" to users beyond academia. A good example to understand the added value of the service is rental cars: Imagine you rent a car only to discover that it has a scratch. You document the damage with a cell phone photo, but when you return it, the rental company says they won't accept it, since you might have caused the scratch yourself because
the date and time of digital files can be manipulated. In fact, the metadata of digital documents is very easy to change.

But this is practically impossible if you use blockchain technology. The special thing about this technology is that data is not stored in a central location but distributed worldwide on tens of thousands of servers. A complicated mathematical procedure is used to constantly compare the data packets. So, if one is changed, you immediately notice that the data no longer matches.

I like being creative and always trying out new things. When I accepted my professorship in Göttingen, I knew I would again set up a large laboratory to implement exciting ideas together with students. Not just software, as is usual for computer scientists, but also hardware. We are currently building quadcopter drones with special flight characteristics for professional filming. One was used for a "Tatort" crime scene shoot. My wife likes to jokingly say when I'm tinkering, "Yes, Bela is playing again." There's something to it. I never think of it as work, but rather as something I enjoy doing.

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