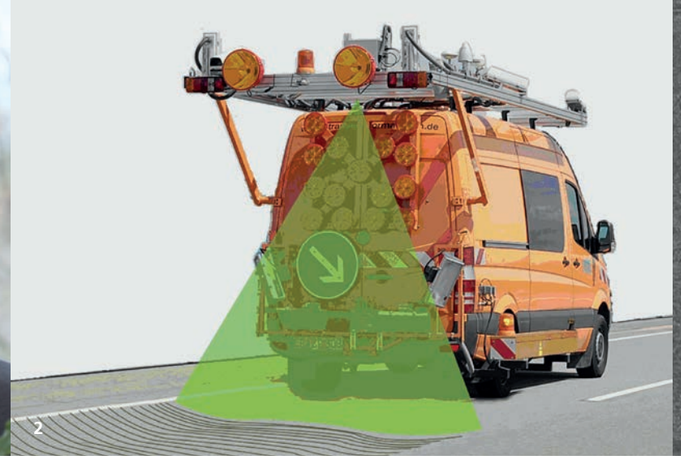
1



2

3

INTERVIEW

»Let's try it!«

On behalf of LEHMANN + PARTNER GmbH, Fraunhofer IPM developed a laser scanner that surveys road surfaces. Since 2012, the Pavement Profile Scanner has been the only laser scanner approved by the Bundesanstalt für Straßenwesen (Federal Highway Research Institute – BASt) for this type of mapping. Dr Dirk Ebersbach is the CEO of LEHMANN + PARTNER GmbH.

Mr. Ebersbach, how did you come to work with Fraunhofer IPM?
We were both exhibitors at the Intergeo trade fair in 2010. At the time, Fraunhofer IPM was developing the »Pavement Profile Scanner« and we were looking for innovative new products. Up to that point, we had been using road assessment vehicles that required a 3.4 meter crossbeam to record the road surface conditions. This was extremely cumbersome, particularly in urban traffic. Then Fraunhofer IPM came along and said: »We can measure that with laser scanners – they are already in use on railways.« So our response was: »Okay, let's try it!«.

Did you already have customers at that point in time?
Our service portfolio has always comprised surveying ruts in the road surface. To do so we used a measurement system that required this big wide crossbeam. You had to notify the authorities of these surveys well in advance. You needed special security, and if anything was in the way you had to fold up the entire recording system. The survey data weren't as good as desired either. As a result, we had long been searching for an alternative system. Then we learnt from Fraunhofer IPM that if we were to use a laser scanner, we wouldn't have this troublesome crossbeam on the vehicle and would only need a small shoe box instead. If it worked, that was the route we should take.

Do you survey more road miles per day with the laser scanner than before?
No, the mileage is about the same. However, the new technology has created an entirely new market: We are now able to perform surveys in urban areas and have gained new customers in the form of municipalities.

What expectations did you have and were these fulfilled by the end of the project?
We wanted to replace the crossbeam system, and were entirely successful in doing so. The biggest hurdle for us was gaining approval from the BASt. In fact, their regulations were designed such that only crossbeam systems could gain authorization. And then we came along and said: »We've got this box which records exactly the same things, it just does it in a different way.« We had to do a lot of convincing, but in the end the BASt said: »We want one of those scanners, too.«

Was it difficult to find common ground between research and industry?
Both sides have to learn new things. We are civil engineers, our partners at Fraunhofer IPM are metrologists and physicists. Naturally, we sometimes talk at cross purposes. Nevertheless, thanks to many years of close collaboration, mutual understanding is growing – on both sides. Over time, we are therefore developing not only a common language, but also a partnership based on trust.

What is the next development you have planned?
We have succeeded establishing the Pavement Profile Scanner. However, the survey vehicles still carry two enormous camera systems with a big flashing light unit. That is what we want to replace next, we want to get to the point where we only have our »small shoe box« on board.

Why is this compactness so important?
We have two business units: The first is purely for the provision of services, which we chiefly offer in Germany and Europe. The second is for the sale of equipment. In other words, we sell our systems worldwide. This is why it is extremely important to have a simple, flexible system. With a compact device, you only have to mount it once and then it is done.

How do you decide which innovations to invest in?
Innovation is rarely initiated by customers. As in the alleged words of Henry Ford, »If I'd asked people what they wanted they would have said faster horses, not cars«, we always try to place new products on the market off our own bat. The Pavement Profile Scanner (PPS) is not merely a ›faster horse‹, it is a completely new solution.

How do you decide which developments to offer as products?
We have a roadmap that lays out where we want to go and primarily contains products and services. We use it to decide which developments could help us to achieve our goals. Ultimately, though, you always have to go with your gut feeling. I put my money where my mouth is. I believe in the technology. We would never be able to develop a sensor on our own. We are too small for that, and we don't have the necessary expertise. Close partnerships with development partners such as Fraunhofer IPM therefore make perfect sense for us.

Thank you very much for talking to us!

Founded in Erfurt in 1990 and today employing a staff of around 200, LEHMANN + PARTNER GmbH offers surveying and consultation services for the maintenance of transport infrastructures. The medium-sized engineering firm employs ultra modern measurement technology to record the condition of roads, cycle paths, and footpaths. This data serves as a basis for managing, maintaining and expanding the transport infrastructure. As a member of the French VECTRA Group, LEHMANN + PARTNER GmbH also operates worldwide.

4

1 *Dirk Ebersbach: »Henry Ford didn't replace horses with faster horses, but with cars.«*

2 *The Pavement Profile Scanner (PPS) accurately records road surface conditions to within a few millimeters, even at speeds of up to 100 kilometers per hour.*

3 *Fraunhofer IPM is currently working on the »PPS plus« – a scanner that reliably records surface features such as cracks in addition to 3D profiles.*

4 *Dirk Ebersbach: »We would never be able to develop a sensor on our own.«*

from: Fraunhofer IPM: Measuring, Monitoring, Optimizing. Annual report 2016/2017, Freiburg i.Br. 2017. pp 16-17