

## Baden-Württemberg Test Area for Autonomous Driving Is Opened Officially

Deputy Minister-President Thomas Strobl and Minister of Transport Winfried Hermann Open the Baden-Württemberg Test Area for Autonomous Driving that Will Be Operated by the Karlsruhe Transport Authority



Start of the TAF (from left to right): Alexander Pischon, Frank Mentrup, Thomas Strobl, Marius Zöllner, Winfried Hermann, and Holger Hanselka. (The complete caption is given at the end of this press release). (Source: Patrick Langer, KIT)

Today, the way to future mobility was paved in the Oststadt district of Karlsruhe: After five months of test operation, the Baden-Württemberg Test Area for Autonomous Driving (TAF BW) was opened officially in Karlsruhe. This marks the official start of the joint project of research institutions, municipalities, and the government of Baden-Württemberg. At the Karlsruhe Transport Authority (KVV), 200 invited representatives of politics, industry, and science were welcomed by the test area consortium. Deputy Minister-President Thomas Strobl and Baden-Württemberg Minister of Transport Winfried Hermann, together with representatives of the consortium from science and municipal politics and the KVV as the future operator of the test area, gave the starting signal for the further development of autonomous driving in Baden-Württemberg.

Directly after the opening ceremony, a user forum took place in the courtyard of the KVV. Among other things, information about the pro-

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### Additional materials:

Video on TAF (in German only):

[https://www.kopfsalat-medien.de/TFA\\_BW\\_imageclip\\_Kopfsalat\\_Medien\\_052018\\_Low-res\\_720p\\_v2.zip](https://www.kopfsalat-medien.de/TFA_BW_imageclip_Kopfsalat_Medien_052018_Low-res_720p_v2.zip)

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jects of potential users could be found there. Several well-known vehicle manufacturers and research institutes also presented their vehicles and innovative vehicle systems around the subject of autonomous driving.

“Mobility is being reinvented and Baden-Württemberg is at the forefront of this”, said Deputy Minister-President and Minister of the Interior, Digitalisation and Migration, Thomas Strobl. “Today, on the birthday of the automotive pioneer from Baden-Württemberg, Bertha Benz, we are launching the Test Area Autonomous Driving and bringing the mobility of the future in a real operation to our streets. We were pioneers in engine development, the core of an automobile. We want and will continue to be pioneers in the digital age. The auto-automobile is the future of Baden-Württemberg.”

“I am pleased that after the cancellation of the federal government, we managed to establish an own test area as a state and without federal subsidies. I am curious about the requirements on the test area and the insights we will gain. I am interested in the impact on traffic and ecology. This extends from the possible change of the future traffic volume in passenger and goods transport and the choice of means of transport, to a possible autonomous public transport with small buses which operate door-to-door, to questions of law of public streets and roads, vehicle registration, data protection, user acceptance and ethical questions to economic efficiency and urban development changes”, added Minister of Transport, Winfried Hermann.

FZI Executive Director and KIT professor J. Marius Zöllner presented the infrastructure of the test area to the guests from industry, science, politics and society. “The possibilities are already great today. In the research institutions, future-oriented technologies on autonomous driving, which must now be established in new applications, are being developed. However, this is only possible if tests can be carried out under real-life conditions. I am pleased to see that with the Test Area Autonomous Driving Baden-Württemberg we were able to create exactly the conditions that enable safe testing. Thus, we have now ideal prerequisites to further develop mobility with regard to technology, economy and society.”

“The test area for autonomous and connected driving in Baden-Württemberg in Karlsruhe, Heilbronn and Bruchsal stands for innovative collaboration of the State Government, science, municipalities and the Karlsruhe Transport Authority (KVV) on the future-oriented topic of mobility”, added Dr. Frank Mentrup, Mayor of the City of Karlsruhe. “Our cities and the KVV are pleased that first modules are available

for our customers: On public roads, individual components of autonomous and connected driving can be tested under realistic conditions.”

The test area paves tomorrow’s way of mobility. “The interrelation of modern information technology, learning systems and mobility technologies with a promising future will create entirely new traffic concepts”, said President of the Karlsruhe Institute of Technology (KIT), Professor Holger Hanselka, in his function as a representative of the research institutions taking part in the opening ceremony. “In the test area, KIT makes an important contribution to the solution of societal future questions. Furthermore, the test area strengthens our ambitions in research and the field of artificial intelligence”, said Hanselka.

One important aspect of TAF BW is the evaluation of new forms of public transport. “We are very pleased that you, Mr. Minister of the Interior, and Mr. Minister of Transport are doing us the honour on this significant day”, said Dr. Alexander Pischon, commercial director of the Karlsruhe Transport Authority and added: “It has only been one and a half years since the funding agreement to build up the test area was handed over here in the street Tullastraße. Since then we have rolled up our sleeves to set the course for this future topic. It makes me especially proud that the KVV will function as the test area operator. The development of new local public transport concepts, such as the use of autonomously driving minibuses, is to be worked on in the future.”

Professor Oliver Lenzen, President of the Heilbronn University of Applied Sciences explained: „Research has been dealing with the subject of autonomous driving for years. It will sustainably change society and urban planning and improve the traffic flow. We as a University are proud to be part of this future project. The test area offers a unique research environment in Baden-Württemberg and integrates at the Heilbronn location also the BUGA 2019, the German Federal horticulture show, with a real laboratory for autonomous logistics of our University. We thus cover the entire process from autonomous driving, parking, to the delivery of products to the consumer.”

Dr. Erik Krempel from the Fraunhofer IOSB emphasized the importance of data protection: “In order to create acceptance for such trendsetting initiatives, it is important to ensure the protection of personal data. We are pleased to be able to contribute our expertise in this respect.”

“With the innovation centre efeuCampus we are bringing a real laboratory into the test field for the last mile”, said Cornelia Petzold-Schick,

Lord Mayor of the City of Bruchsal. “On the area of the former Dragonerkaserne an exciting development environment is being created, on which already the Institute of Energy Efficient Mobility (IEEM) of the Karlsruhe University of Applied Sciences and the research department of the SEW-EURODRIVE are located.”

“The development of a state-wide Test Area for Autonomous Driving is a key element in the research and development of intelligent transport systems”, said Professor Frank Artinger, President of the Karlsruhe University of Applied Sciences. “The challenges that will arise until the realisation of autonomous driving are still immense. However, helping to shape developments - also from the perspective of protecting human lives in traffic - and contributing one's own expertise is a very exciting and motivating task”.



### **About the Baden-Württemberg Test Area for Autonomous Driving**

On the Baden-Württemberg Test Area for Autonomous Driving (TAF-BW), companies and research institutions can test future-oriented technologies and services related to connected and automated driving in daily road traffic. These include automated driving of cars, buses, and commercial vehicles, such as road cleaning and delivery service vehicles. In addition, the regulatory and legal requirements can be developed further. For this purpose, various kinds of traffic areas were prepared in the initial stage, highly precise 3D maps were created, and sensors were installed for the real-time recording of traffic and the factors influencing it.

For the design, planning, and setup of the test area, the coordinating Ministry of Transport has provided EUR 2.5 million. Setup of the test area started in 2016. The start of operation was May 2018. The Ministry of Science, Research, and the Arts (MWK) and the Ministry of Transport (VM) of Baden-Württemberg will fund research on this test area with another EUR 2.5 million under the “Smart Mobility” project. MWK and VM will present the individual projects soon.

Find more information at: [www.taf-bw.de](http://www.taf-bw.de) (in German only)

## About the consortium

The design, planning and construction of the Test Area Autonomous Driving Baden-Württemberg is implemented by a consortium consisting of the FZI Research Center for Information Technology, the City of Karlsruhe, the Karlsruhe Institute of Technology (KIT), Karlsruhe University of Applied Sciences, the Fraunhofer Institute of Optronics, System Technologies and Image Exploitation (IOSB), Heilbronn University of Applied Sciences, and the City of Bruchsal as well as further associated partners of the test area. The operator of the test area is the Karlsruhe Transport Authority (KVV).

As mentioned above, the Ministry of Transport Baden-Württemberg has provided the consortium with EUR 2.5 million. The consortium as well as its associated partners and industrial partners bring in additional own funds to the project, in the framework of which a test area for interconnected and automated driving open to technology and independent from individual enterprises will be created.

The **FZI Research Center for Information Technology at the Karlsruhe Institute of Technology** is the consortium leader contributing know how to the perception of traffic participants at crossroads, the interconnected infrastructure as well as IT data retention. Furthermore, existing research vehicles will also be made available for interested test area users as sensor carriers and as a research platform. The topic of data protection as well as the set legal framework are also taken into account and researched by FZI employees. Find more information at: [www.fzi.de/en](http://www.fzi.de/en)

The **City of Karlsruhe** supports the construction of the test area by providing special equipment or traffic light systems, personnel resources and the development of the free internet offer KA-WLAN. Furthermore, as a co-shareholder of the KVV, it also ensures a smooth operation of the test area. Please find more information at: <https://www.karlsruhe.de/int.en>

The **Karlsruhe Institute of Technology (KIT)** participates in the planning as well as the construction of the test area, builds a mobile control centre and provides office spaces and workshops for the test area users. In addition, the researchers work on the fundamentals of traffic flow models and provide testing equipment for technical tests. Please find more details about the KIT and the KIT Mobility Systems Center at: [www.mobilitaetssysteme.kit.edu](http://www.mobilitaetssysteme.kit.edu)

**Karlsruhe University of Applied Sciences** participates especially in the following thematic fields in building up the test area: equipment of

the road network with sensors and video technology for the recording of traffic flows, weather and road condition, integration of data on the structural road condition into the highly precise maps, workshops in Bruchsal as well as the definition/realisation of information systems and integration of real-time information. More at: <https://www.hs-karlsruhe.de/en/>

A web portal will be offered by **Fraunhofer IOSB** with the start of the test area to inform interested citizens about the used sensors. It gives an insight into the installed and planned sensors and live information about the road condition as well as the track layout of the test area. In the work package on legal framework, data protection and safety, Fraunhofer IOSB brings in extensive knowledge about technical data protection in complex systems. It conducts research on new mobility systems and supports partners in developing concepts about how the test area can fulfil data protection requirements during operation and at the same time achieve the desired benefit. More at: <https://www.iosb.fraunhofer.de/servlet/is/12481/>

The **City and Region of Bruchsal** contribute the second largest e-car sharing system of Baden-Württemberg “zeozweifrei unterwegs” to the test area as well as the innovation centre for experimental urban logistics “efeuCampus”, and attractive track sections, such as the passage through Bruchsal Schloss, the baroque palace complex of Bruchsal, which Bertha Benz had once used for her very first car ride. More at: <http://www.bruchsal.de/site/Bruchsal-Internet/node/497722/Len/index.html>

The **City of Heilbronn and Heilbronn University of Applied Sciences** integrate a route section into the test area containing the entrance to the Buga-19 and combining the real laboratory for autonomous logistics (Reallabor Autonome Logistik). This opens up new possibilities for the examination of urban mobility concepts. Within the entire test area, researchers of Heilbronn University of Applied Sciences deal with the construction and the design of intelligent sensor systems for environmental recognition and algorithmic situation analyses. More at: <https://www.hs-heilbronn.de/heilbronn-university>

In its function as the later operator, the **Karlsruhe Transport Authority (KVV)** takes on a central role in the test area. From the control centre in the city district Karlsruhe Oststadt, the KVV will coordinate the drives and applications of the test area users and also test autonomous minibuses in a pilot project itself. Please find more information at: <https://www.kvv.de/en.html>

Complete caption: *By pushing a button, they made the first vehicle move on the Test Area for Autonomous Driving (TAF) (from left to right): Dr. Alexander Pischon, Managing Director of the Karlsruhe Transport Authority, Dr. Frank Mentrup, Lord Mayor of the City of Karlsruhe, Thomas Strobl, Baden-Württemberg Minister of the Interior, Prof. Marius Zöllner, FZI Research Center for Information Technology, Karlsruhe Institute of Technology, Winfried Hermann, Baden-Württemberg Minister of Transport, and Prof. Holger Hanselka, President of Karlsruhe Institute of Technology.*

**Being “The Research University in the Helmholtz Association,” KIT creates and imparts knowledge for the society and the environment. It is the objective to make significant contributions to the global challenges in the fields of energy, mobility and information. For this, about 9,300 employees cooperate in a broad range of disciplines in natural sciences, engineering sciences, economics, and the humanities and social sciences. KIT prepares its 25,500 students for responsible tasks in society, industry, and science by offering research-based study programs. Innovation efforts at KIT build a bridge between important scientific findings and their application for the benefit of society, economic prosperity, and the preservation of our natural basis of life.**

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