

Kraftfahrt-
Bundesamt



/ Market Surveillance Report 2022

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/ Introduction

In this report, the Kraftfahrt-Bundesamt (KBA) publishes the results in the area of market surveillance of vehicles and vehicle parts which are available on the German market for the year 2022.

KBA's product inspections were focused on different areas last year. Since 6 July, 2022, the General Safety Regulation (EU) 2019/2144 has been in force, standardising special assistance systems as a prerequisite for new vehicle types in the scope. Among other things, this applies to turn assistants for trucks that signal to the driver whether road users are in the area relevant for the turn manoeuvre. The results of the test campaign conducted for this purpose are presented by KBA in this report. Another key topic was assisted, automated and autonomous driving. On the one hand, this report compares the development of legislation at national and international level. On the other hand, it examines the results of investigations by KBA into assisted driving functions, in particular the automatic lane changing.

KBA initiates recalls, if vehicles have defects that pose a risk to road safety or the environ-

ment or do not meet legal requirements. In order to provide citizens with a simple, reliable and up-to-date way of reporting defects, e.g. in connection with driving or the functionality of vehicle systems, KBA is introducing its new web application in the form of the Defect Reporter. As a result of this notification, an inspection of the affected vehicle or its component is initiated within KBA. For those who are wondering how a market surveillance investigation actually works, this report uses an example of a defective gas tank to illustrate the market surveillance process.

From the area of sanctions, information is provided on the current dimensions of online trading in unapproved parts requiring approval, based on four product groups.

The report is rounded off by details of the cooperation agreement with the Bundesanstalt für Straßenwesen (BASt), some facts on the EU Commission's proposal for the planned Euro 7 emission standard, a classification by KBA of temperature-dependent defeat device and an outlook on the market surveillance year 2023.



What Is Market Surveillance?

Market surveillance is based on national and international legislation that provides various tools to protect the market from harmful influences. It is concerned with the safety and environmental compatibility of vehicles as well as competition and a level playing field for all market participants.

In Germany, KBA is responsible for market surveillance of motor vehicles and their systems, components and independent technical units. Three pillars form the basis of KBA's effective market surveillance: **investigations, recalls and sanctions.**

Market Surveillance

Investigations

Investigations serve to examine whether the goods made available on the market comply with the legal requirements. If KBA detects specific deviations from the requirements or identifies product risks to health, safety and the environment, the manufacturers, distributors or other economic operators responsible for the product are confronted with the results. If serious risks or deviations from regulations are involved, the product responsible is requested to carry out a recall. If necessary, restrictive measures, such as a sales ban or the destruction of the product, can also be issued.

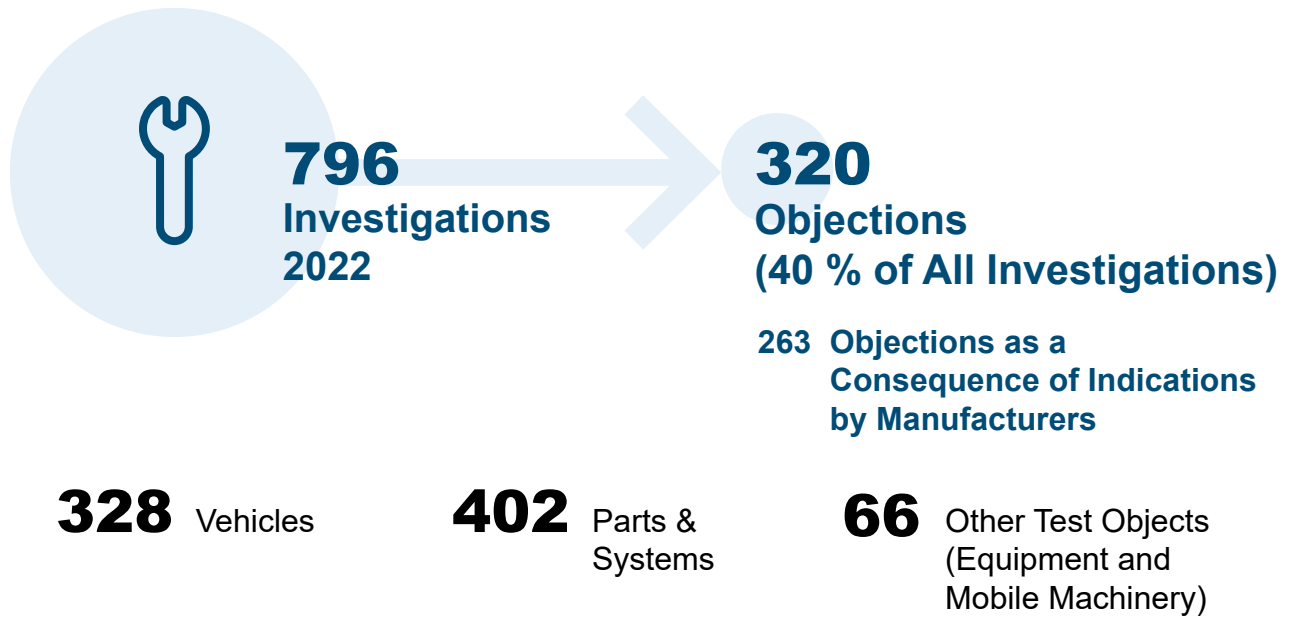
Recalls

KBA initiates recalls as an official measure against those responsible for the product, if the vehicles or vehicle parts they make available on the market deviate from the applicable regulations or if they pose a risk for the consumer or the environment. Product responsible must take all measures to eliminate the defect and restore the vehicle to its legally compliant state. The vehicle owners concerned will be informed by mail and instructed to take their vehicle to a specialist workshop to have the defect rectified. If they fail to do so despite repeated requests, KBA can prohibit the operation of the vehicles in question by notifying the local registration office, so that the safety of all road users – not just the owner – is ensured.

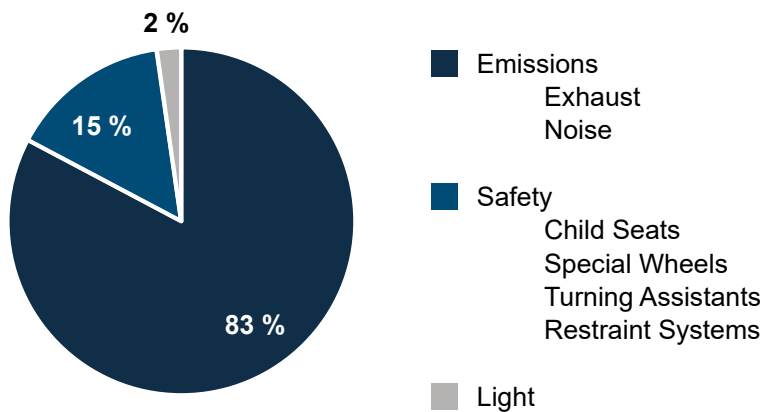
Sanctions

KBA imposes sanctions on product owners who do not comply with the prescribed rules. A significant proportion of KBA's proceedings are directed against vehicles and products that are not offered for sale in compliance with the applicable laws. These are identified by missing or incorrect approval marks. KBA punishes violations with heavy fines. For this reason, KBA monitors the market and examines it for such products. Furthermore, KBA examines products that have attracted attention during customs import controls and decides on their import. In this way, KBA prevents vehicles and vehicle parts that do not comply with the regulations from entering the market at an early stage. The focus is on safety, environmental compatibility and fair competition.

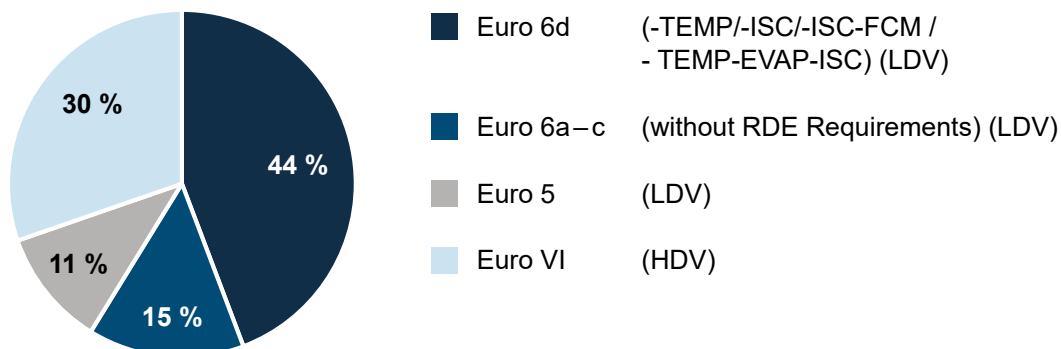
/ Investigations



Test Subjects of Market Surveillance 2022



Emissions-Relevant Tests 2022





The Figures for the Product Tests are Composed as Follows

Every year, KBA's market surveillance carries out product tests on a wide range of products. Test objects are selected from special wheels to passenger cars to heavy commercial vehicles.

In addition to the test objects, the test contents also vary. For example, tests are carried out on lamps, restraint systems, automated steering systems, braking systems, emission control systems and noise reduction systems.

The tests carried out are then classified into one of the five main categories of *vehicles*, *systems*, *components*, *equipment* and *mobile machinery* on the basis of the respective test object.

Types of Examination of Market Surveillance

The test objects explained in the previous section are then additionally classified into the categories *emissions*, *safety* and *light*, depending on their test content. The emissions category includes both exhaust and noise emissions.

Emission-Related Scope of Testing

A fundamental part of the tests carried out deals with exhaust emissions. Every year, vehicles are tested on exhaust roller dynamometers and with portable emission measurement systems (PEMS) in order to test real driving emissions (RDE). Within the framework of a market surveillance year, vehicles with a wide range of emission standards are tested. The majority of the tests are directed at the currently most important emission standards: Euro 5 and Euro 6. These are the subject of the evaluation carried out here.

Details of the tests carried out and their results can be viewed on our website.

Details of product tests carried out can be found at www.kba.de or under this QR code:

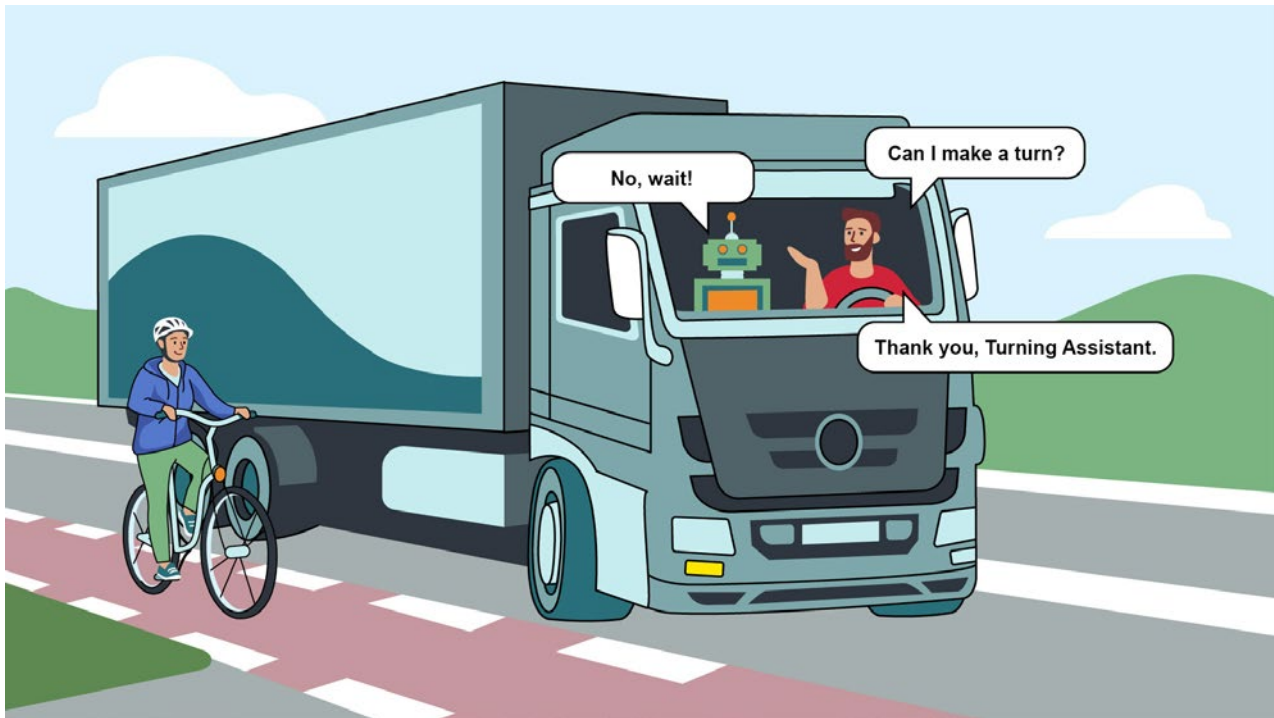


Manufacturer's Defect Reports

In addition to KBA's planned product tests, the product testing department also follows up on manufacturer reports of possible defects. These manufacturer reports influence the number of complaints made in a given year.

The exhaust emission tests comprise different measurement procedures, which are designed depending on the respective object of the test. The measurement procedures can have different ambient conditions (e.g. ambient air temperature) in the corresponding driving cycles and profiles (NEDC, WLTC and RDE). In addition, the driving cycles and profiles are individually adapted. The possible degrees of freedom in the design of the measurement procedure serve, among other things, to ensure that tests are unpredictable and thus manipulations are enabled to be detected.

Tests of Retrofittable Turning Assistance Systems on Trucks



In the market surveillance year 2022, KBA carried out an extensive test campaign on retrofittable assistance systems. In the process, 16 retrofit assistance systems were tested on a truck (MAN TGL 8190) with a box body. The basis for the tests was the Verkehrsblatt publication in 2018 (VkBl. 2018, p. 719), according to which the systems have received approval. In addition, supplementary tests were carried out with increased requirements that were not (yet) the subject of the approval or test specifications and whose framework conditions were further developed together with the Bundesanstalt für Straßenwesen (BASt), the Bundesministerium für Digitales und Verkehr (BMDV) and technical services.

These include tests in accordance with the latest "Recommendations on Technical Require-

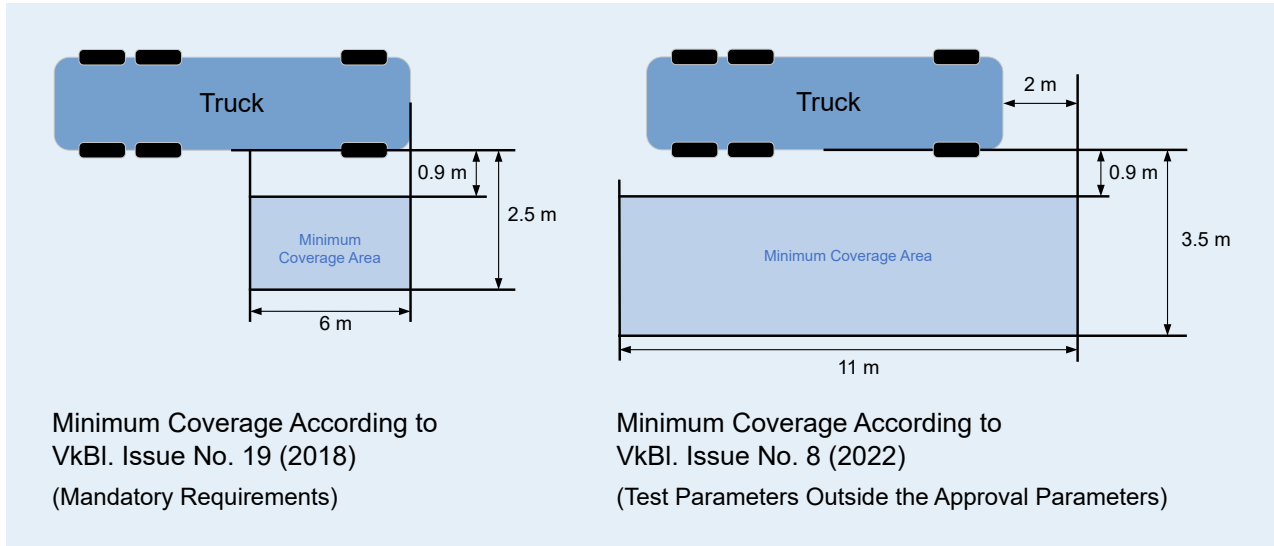
ments for turning assistance systems for retrofitting and upgrading" of 2022 (VkBl. 2022, p. 239), as well as supplementary tests (including a parked passenger car and a further enlarged coverage area) with regard to the continuous further development of the regulations.

In addition, e-scooters were used in the tests. These are increasingly encountered in real road traffic and can get into comparable situations to cyclists.

The tests carried out on retrofittable turning assistance systems can be divided into two categories: **static** and **dynamic**. In the **static tests**, the coverage area of the assistance system is checked, among other things.

The minimum coverage area for supplementary tests has been extended again and differs from the Verkehrsblatt publication used. The

coverage areas of the two Verkehrsblatt publications are shown in the two diagrams below (not to scale).



In the **dynamic tests**, the triggering behaviour of the assistance systems is examined while the truck is moving. Among other things, the driver had to pass through a corridor of pylons in the middle of a sufficiently large test area. If the assistance system did not signal during this test, the test was considered to have been passed (false positive test). In order to realistically expand the coverage of possible scenarios, further traffic scenes were added.

The test was carried out with the aid of simulated scenarios, e.g. a bicycle overtaking a lorry in front of a junction. The results of the tests carried out can be seen in the following diagram. It should be noted that only the tests according to the 2018 publication of Verkehrsblatt (VkBl. 2018, p. 719) were a binding requirement for the systems considered.

**Requirements from
VkBl. Issue No. 19 (2018)**

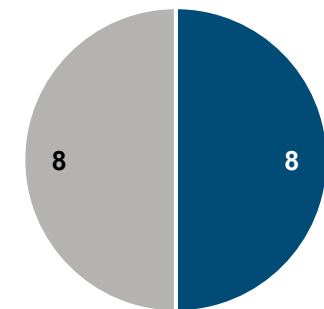
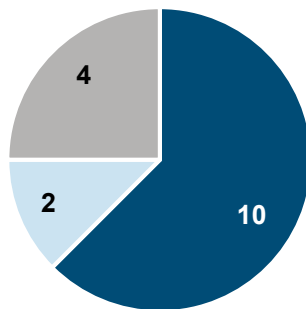
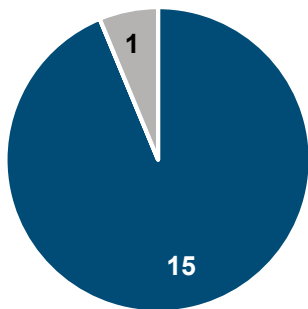
**Supplementary
Requirements from
VkBl. Issue No. 8 (2022)**

**Further Developed
Requirements According to
Developed Test Scenarios**

Approval Requirement 2018

Approval Requirement 2022

*Possible Further Development
of Regulations*



■ Requirements Fulfilled

■ Requirements Partially Fulfilled

■ Requirements not Fulfilled

Of the 16 assistance systems tested, only one did not comply with the mandatory requirements and was therefore rejected. In the extended tests based on the Verkehrsblatt publication of the year 2022 (VkBl. 2022, p. 239), the systems examined already fulfilled the increased requirements for the most part. Six systems were not able to meet these requirements, while two systems were able to partially meet the requirements. In KBA-specific test scenarios, which in contrast to the other two test scenarios were only carried out as static tests, half of the systems considered fulfilled the extended requirements.

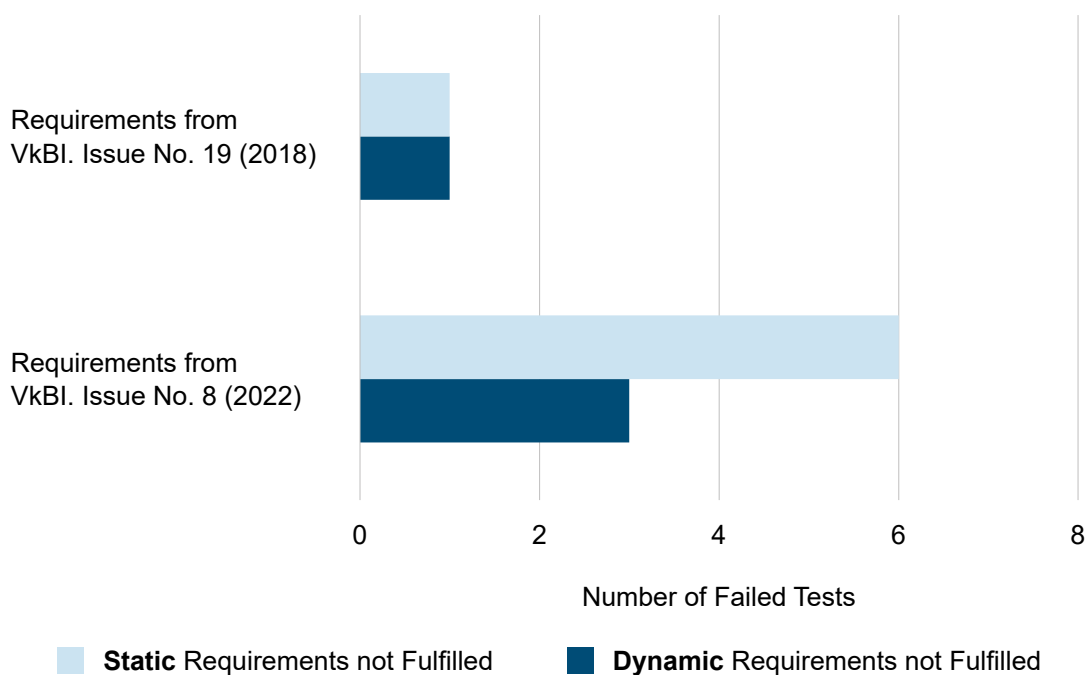
Overall, the test campaign has shown that a large proportion of the retrofit turning assistance systems considered already meet requirements that exceed the statutory requirements.

In the following illustration, the systems that had not yet or only partially fulfilled the increased approval requirements at the time of testing are broken down with regard to the results of the static and dynamic tests. Since the test scenarios that were developed together with BAST, BMDV and technical services were exclusively static tests, they are not considered in the following illustration for the subdivision into static and dynamic requirements.

It can be seen from the presentation that the only system to be objected was not able to fulfil the static requirements from the Verkehrsblatt publication 2018 (VkBl. 2018, p. 719). In the dynamic tests, the offending system was able to meet the requirements sporadically, but not fully.

Overall, it can be said that the static requirements were the main challenge for the tested systems.

**Requirements not or only Partially Fulfilled –
Division into Static and Dynamic Test Contents**



Tests of Automated Steering Functions

KBA's market surveillance activities in 2022 focused on tests of assistance systems. In particular, vehicle types of one manufacturer were found to have driving functions which, in certain driving situations, exceeded the approval of the steering equipment according to UN Regulation 79 (Uniform provisions concerning the approval of vehicles with regard to the steering equipment) and, in some cases,

exceeded the requirements of the Road Traffic Regulation (StVO). The table below lists the categories of automatic steering functions (ACSF – Automatically Commanded Steering Function) that can currently be permitted by the UN Regulation 79 (UN-R 79). In addition to the ACSF steering functions, there are also the corrective steering functions, which are also covered by UN-R 79:

Category of Automatic Steering Functions	Definition According to UN-R 79
ACSF – A	<i>Function that assists the drive of the vehicle at a speed of 10 km/h or less when manoeuvring at low speed or during parking manoeuvres, if necessary.</i>
ACSF – B1	<i>Function that assists the driver in maintaining the selected lane by influencing lateral movements of the vehicle.</i>
ACSF – C	<i>Function that is triggered/activated by the driver and can perform a single lateral manoeuvre (e.g. lane change) when instructed by the driver.</i>
Other Steering Functions	
Corrective Steering Function	<i>Control function, for a limited period of time, in which changes in the steering angle of one or more wheels can take place, for example for the purpose of lane keeping in the vehicle.</i>

In addition to UN-R 79, there is also the possibility of an approval according to UN Regulation 157 (approval with regard to the automated lane departure warning system). UN Regulation 157 (UN-R 157) allows the driver for the first time to completely hand over the driving task to the system in certain traffic situations (automated mode).

However, the tested vehicle, which been checked by KBA and BAST, did not have such

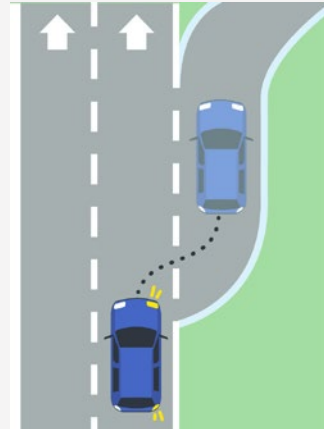
a system, so the requirements from UN-R 157 were not part of the vehicle approval. Within the scope of the analysis of the test vehicle behaviour, there were anomalies when driving through motorway junctions and slip roads. In these situations, scenarios were observed that were not in accordance with UN-R 79 and thus represented a deviation from the regulations. This also means that the offending steering functions were outside category A, B1 or C as well as the corrective steering function.

Scenario 1-a Departure – Departure at a Junction

- Departing via a junction (e.g. from a motorway)
- Navigation system has created a route plan

- Behaviour
- Vehicle automatically activated direction indicators
 - Test object steered independently into the exit area and the deceleration lane

- Deficiency
- According to ACSF – C, the driver must trigger the driving function
 - In this scenario, the manoeuvre is performed automatically without driver participation.
 - No appropriate communication/warning was given to the driver of the vehicle

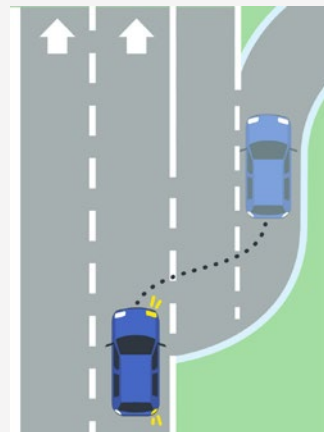


Scenario 1-b Departure – Departure at a Motorway Junction

- Subject to change motorway via the outermost exit lane
- Navigation system has created a route plan

- Behaviour
- Vehicle automatically activated direction indicators
 - Vehicle steered independently into the lane to be selected according to the route planning

- Deficiency
- Identical with **scenario 1-a**

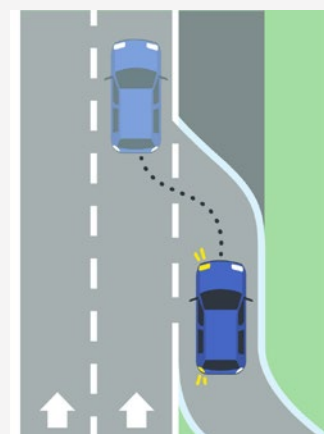


Scenario 2 Access – Access to the Motorway

- Vehicle should change from the entry lane to the target lane (“threading”)
- Navigation system has created a route

- Behaviour
- Vehicle automatically activated direction indicators
 - Vehicle automatically changed to the target lane without driver participation

- Deficiency
- Identical with **scenario 1-a**



It can be seen from the previous overview that the respective vehicle behaviour cannot be depicted with the functionalities that can currently be approved in UN-R 79. The identified driving behaviour (automatic lane change without manual initiation by the driver) corresponds to an automated or autonomous functionality for which no corresponding approval existed or was granted. The manufacturer concerned has acknowledged the non-compliance and is making changes to the driver assistance system to restore compliance, which will be verified by KBA.

The findings from the investigations were used as an opportunity to carry out tests on vehicles from other manufacturers. The focus was on the scenario of the motorway slip road (compare with scenario 2 described above).

The corresponding tests were carried out at KBA's own Test Centre Leck (TeCeL). It enables KBA's test engineers to carry out critical driving manoeuvres in test situations in a controlled and relatively safe manner.



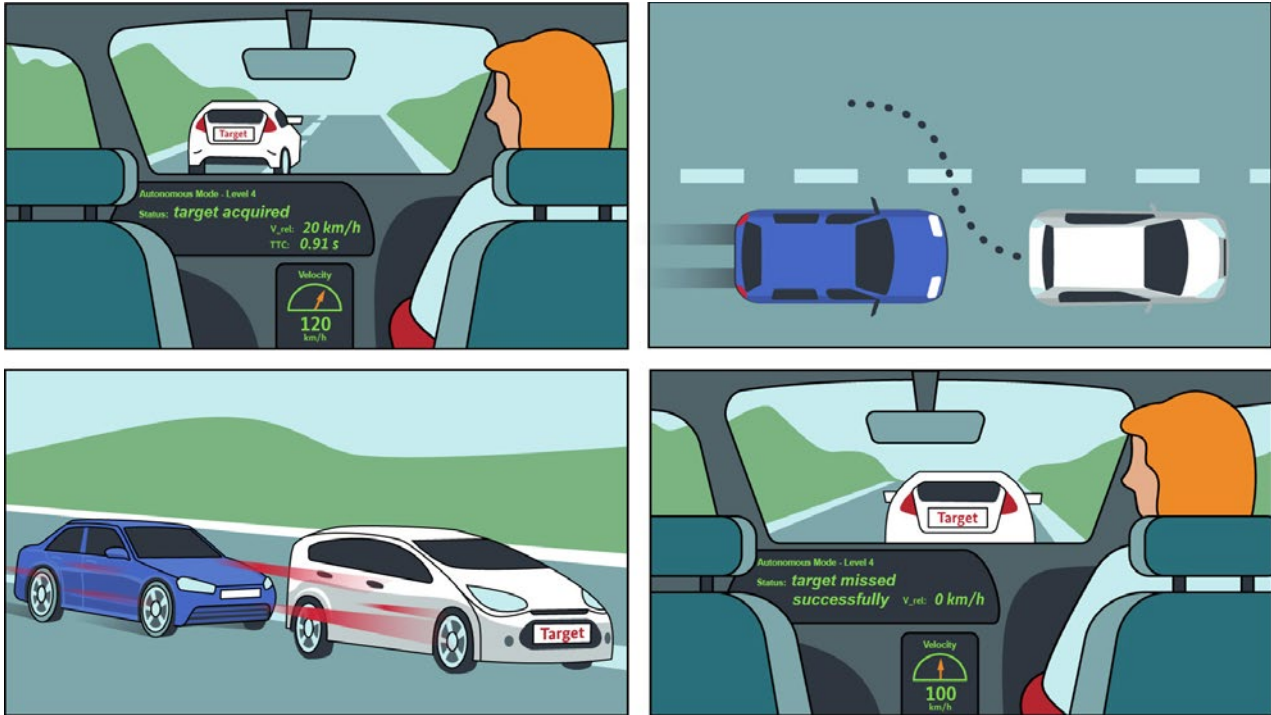
Drive up at TeCeL for test purposes

Evaluation of the Tests Carried out on ACSF

The final evaluation of the assistance system tests is still in progress at the time of writing. However, in the course of the tests, it has already been realised that mobile obstacles are absolutely necessary for certain test scenarios. These take on the role of a vehicle and, in the event of a collision, do not endanger the peo-

ple involved in the test. In one test scenario an additional vehicle was to be in the blind spot of the test object. This scenario could not be fully simulated due to the safety aspect. With an appropriate obstacle (the so-called target), the scenario could have been completed under "real" conditions (up to a possible collision).

Update on Automated and Autonomous Driving



In the scene shown above, in which a vehicle unexpectedly enters our lane with less speed, all went well. The autonomous vehicle was able to avoid the collision in accordance with the requirements to be met. In order to reproduce such test scenarios as the “cut-in manoeuvre” shown here in a reproducible manner and without creating risky situations for the test personnel, so-called “targets” are used during the tests. These are flat, driven and “traversable” platforms that simulate the vehicle contour with “soft” textiles and rods. They are unmanned and remote-controlled.

As shown below, there have been some legal changes in the area of autonomous driving in the past year 2022. This created the possibilities to authorise an autonomous vehicle or the corresponding function both nationally and internationally.

In order to provide an overview of the new legal basis and the associated requirements for market surveillance, the national and international regulatory framework is briefly presented on the following pages. In addition, the traffic scenario outlined above – this is a test scenario to be complied with – is addressed in the two Regulations. We also provide further important information on automated and autonomous driving on the website www.kba.de.

Details about automated/autonomous driving can be found at www.kba.de or under this QR code:



In the past year 2022, legislation in particular has developed further at national and international level. Both in Germany and at EU level, it is now possible to permit autonomous driving functions.

National

Autonome-Fahrzeuge-Genehmigungs-und-Betriebs-Verordnung – AFGBV

- Regulation entered into force on 01.07.2022
- In conjunction with the *Autonomous Driving Act* (in force since 28.07.2021), the following permits can now be issued by KBA:
 - Test approvals for vehicles with automated or autonomous driving function from SAE level 3
 - Approval for subsequently activatable automated or autonomous driving functions from SAE level 3
 - National type-approvals for motor vehicles with autonomous driving function from SAE level 4 onwards
- AFGBV falls within the scope of the Framework Regulation (EU) 2018/858 (national small series – Article 42).

International

Implementing Regulation (EU) 2022/1426 – on Type-Approval of the Automated Driving System (ADS) of Fully Automated Vehicles

- Implementing Regulation of 05.08.2022 (entered into force on 15.09.2022)
- For the application of the “ADS Regulation”, an adaptation of the Framework Regulation (EU) 2018/858 was also necessary.
- This was done by Delegated Regulation (EU) 2022/2236 (entered into force on 06.12.2022).
- Now KBA can issue the following approvals:
 - EU type approvals for motor vehicles with autonomous driving function from SAE level 4 in small series production
- The approval is based on Article 41 of the Framework Regulation (EU) 2018/858 (EU type-approval for small series vehicles).

Points Addressed to Market Surveillance

- **§ 5 of AFGBV contains requirements for market surveillance**
- For example, it is stated that KBA carries out regular checks to verify whether
 - the requirements of the AFGBV are complied with and
 - no risks emanate from the corresponding products
- In addition, the Bundesamt für Sicherheit in der Informationstechnik (BSI) is also involved in the assessment of information technology security.

- In the already existing **Regulations (EU) 2019/1020 and 2018/858**, the requirements for market surveillance were laid down
- In addition, market surveillance is involved in the following points of the “**ADS Regulation**”, among others:
 - Involvement in manufacturer notifications of safety-critical and short-term incidents
 - The issuing type-approval authority shall share information from the annual incident report to be submitted by the manufacturer.

Both Regulations Describe Test or Traffic Scenarios that must be Observed. This for Example Includes the Scenario of Approaching Vehicles:

National

AFGBV Annex 1 Part 2 Paragraph 10.2.5

„Collisions with traffic participants travelling in the same direction and entering their own lane shall be avoided within [...] certain conditions. [...]”

International

Implementing Regulation (EU) 2022/1426 Annex III Part 1 Paragraph 1.4.2

„Collisions with cutting in vehicles, pedestrians and cyclists travelling in the same direction, as well as with pedestrians who can start to cross the street, shall be avoided at least within the conditions determined [...]”

Based on a mathematical relationship that is identical for both regulations, a **requirement for safe collision avoidance** results when a vehicle enters its own lane above the TTC values below.

- **TTC-Value:** Time to collision (TTC) at the time of intrusion into the lane of the motor vehicle with autonomous driving function in seconds. Penetration is defined as exceeding the outer edge of the barrier by more than 30 centimetres.
- **v_{rel} :** Relative speed between the fully automated vehicle and the incoming vehicle (positive, if the ADS vehicle is faster than the incoming vehicle).

The table below shows examples of speeds in 10 kilometre per hour increments.

Relative Speed in km/h	TTC-Value in Seconds	TTC-Value in Seconds
	<i>with Vehicle Occupants Standing</i>	<i>for other Motor Vehicles</i>
10	0.74	0.48
20	1.32	0.71
30	1.9	0.94
40	2.47	1.18
50	3.05	1.41
60	3.63	1.64

Source: AFGBV Annex 1 Part 2 Paragraph 10.2.5 and Reg. (EU) 2022/1426 Annex III Part 1 Paragraph 1.4.2

The above cut-in-scenario of dangerously cutting in vehicles will also find its way into the test catalogue of market surveillance for autonomous vehicles in the future. Further expansion of the test infrastructure is necessary to test this and other scenarios. In the previous market surveillance year 2021, road markings were already applied on KBA test site. KBA is successively adapting its infrastructure to the current legal requirements.

Since not every scenario can be simulated with “real” vehicles, it is necessary to use targets. In the event of a collision, the vehicle to be tested is not damaged. The target, which was provided by BAST, can be reassembled and reused after the event of a collision. The illustration below shows an emergency braking scenario. The test vehicle drives towards a white target:

Targets (Test Instruments that Replace Real Vehicles)



Vehicle came to a stop before colliding with the target

The targets are not limited to static scenarios. Depending on the design, they are movable and can be controlled precisely and computer-aided from a distance. This means, for example, that the scenario of the intervening vehicle can be mapped and concretely checked. Par-

ticularly for the automated and autonomous driving, corresponding dynamic targets are required so that the correct functionality can be verified at a higher level. AFGBV also refers to the use of corresponding test tools.

AFGBV Annex 1 Part 2 Paragraph 11

“In addition to real vehicles, state-of-the-art test tools that replace real vehicles and other traffic participants (e.g. soft targets, walking dummies, mobile platforms) may be used for the tests. The test tools shall be equivalent to real vehicles and other road users in terms of the characteristics relevant for a performance evaluation of the sensor technology. [...]”

(Translation from German regulation text, non-official translation)

/ Recalls and Public Information

Recalls in 2022



Approx.
3.0 Mil - 12 %*
 Recalled Vehicles

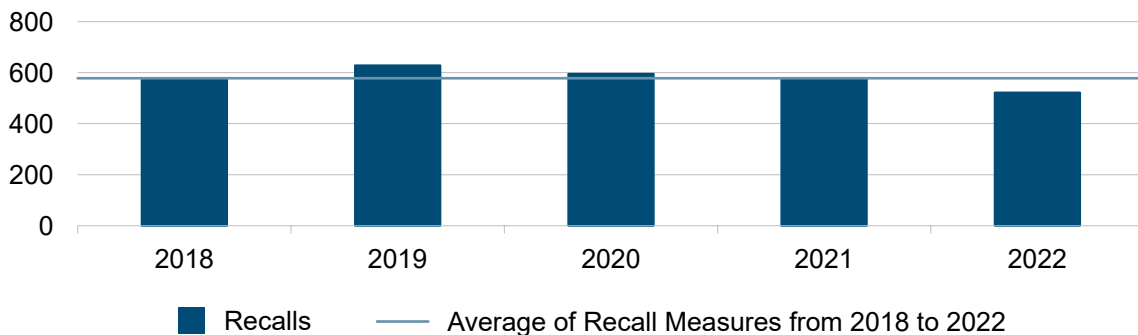


Approx.
99,000 + 22 %*
 Decommissionings

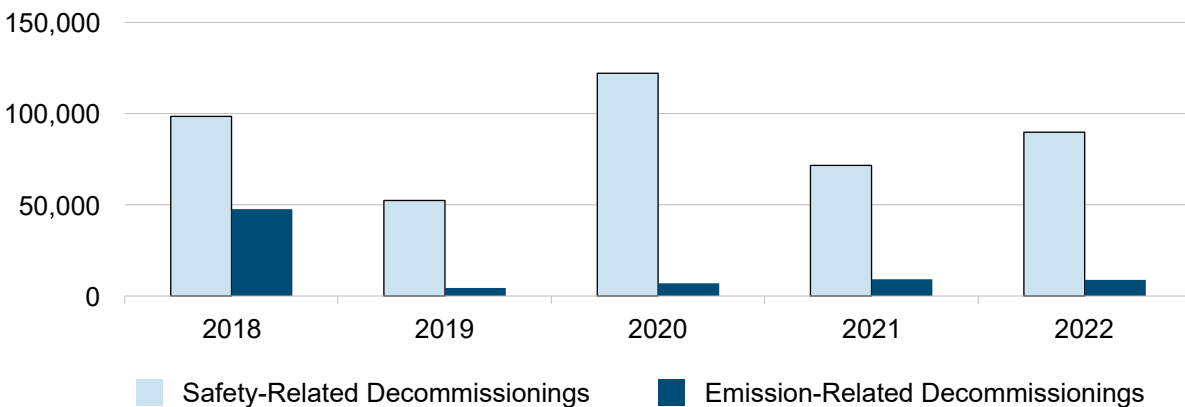
* Compared to 2021 (Approx. 3.4 Mil)

* Compared to 2021 (Approx. 81,000)

Recalls 2018 to 2022



Initiated Decommissionings 2018 to 2022





How are Recalls Initiated?

There are various ways in which KBA becomes aware of risks and deviations from regulations. On the one hand, this is done through proactive product inspections by KBA. and on the other hand, through reports from manufacturers. KBA

is also informed by the public and other authorities. Manufacturers of vehicles and vehicle parts are obliged to inform KBA as soon as there are indications of corresponding defects.

The Evaluation

If, in the course of the assessment, KBA determines that the notified product poses a serious risk or that the product does not comply with the applicable regulations, KBA will request the relevant economic operator to take corrective action. As a rule, the economic operator will then propose the implementation of a recall. If the economic operator does not take corrective

action or does not take appropriate corrective action, KBA orders restrictive measures, which are regularly recalls. In parallel, notifications are made via Rapid Exchange of Information System (RAPEX) and the Information and Communication System for Market Surveillance (ICSMS) to inform the public and the other competent authorities of the EU Member States.

The Recall Campaign

Not all recalls are identical. The time taken by KBA to process a recall depends on the severity of the risk posed by the defect. In the case of serious risks, a quicker response is usually required than in the case of a simple non-compliance with no safety or environmental

impact. In accordance with the legal requirements, the economic operator usually obtains the addresses of the owners from the Central Vehicle Register (ZFZR) of KBA. This enables the defects to be fully rectified.

The Vehicle Owner Letter

As part of the recall process, vehicle owners receive letters from the responsible economic operator. This letter requires them to take part in the recall in order to have the defect rectified. As a rule, it is sufficient to visit a workshop des-

ignated by the economic operator. The recall is intended to encourage owners to cooperate in eliminating risks and non-compliances. If the recall is not carried out immediately, a reminder is usually sent.

Consequence of Non-Participation: Decommissioning

If the defect in the vehicle has not been rectified after several reminders, KBA will inform the local registration authority. After this notification the registration authority can, after its own examination issue a prohibition of operation and withdraw the vehicle from circulation.

Is your vehicle affected by a recall?
Check www.kba.de or use this QR code
(German content):



New Web Application – Defect Reporter

In order to enable citizens to report vehicle defects digitally, quickly, easily and up-to-date, KBA launched the new Defect Reporter available since January 2023.

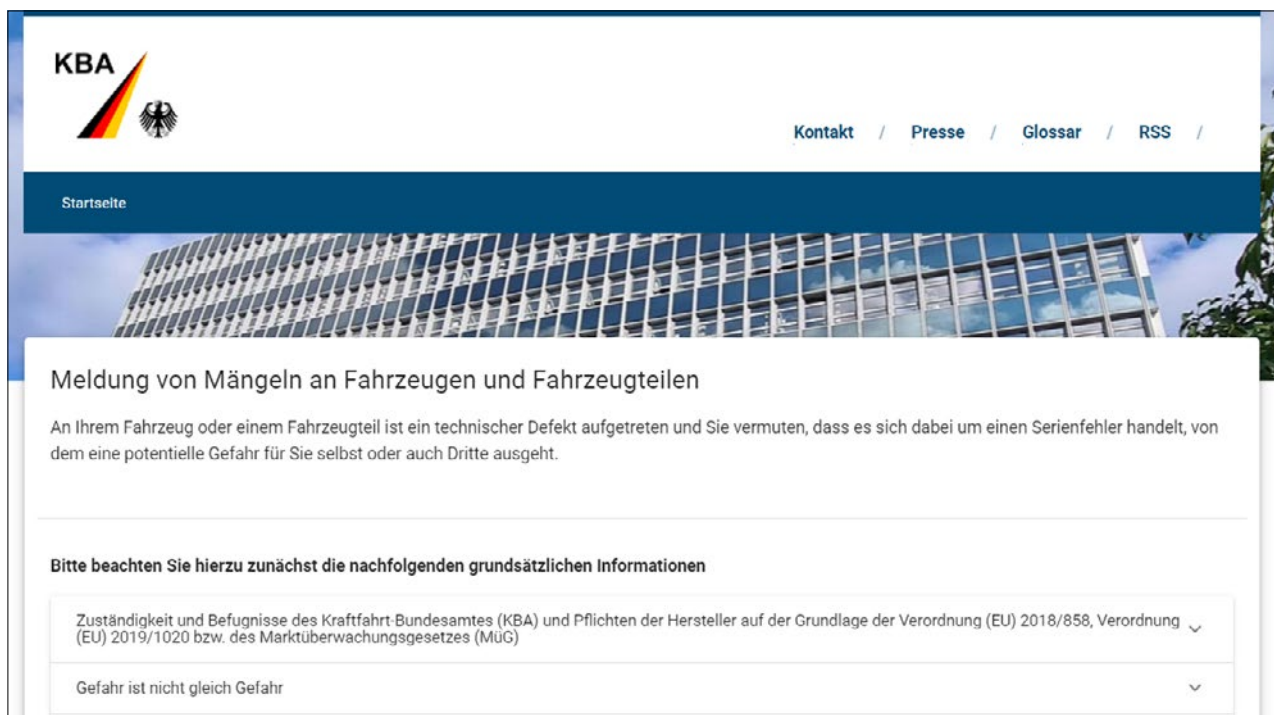
The online notification form enables the citizen to report a defect to KBA that poses a potential danger to himself or third parties or that may affect the functionality of a vehicle or component.

KBA investigates all reports and analyses vehicle defects if a potential risk or non-compliance is identified. As a general rule, KBA is not responsible for vehicle defects that can be repaired or detected during normal maintenance and servicing work or regular general inspections and that normally result from regular use.

If an investigation is initiated by KBA and a dangerous defect is found, this may result in a recall of the vehicle or a warning to the public.



Is your vehicle affected by a defect? Report it at www.kba.de or use this QR code:



1

Start Page with Basic Information

On the first page, you will find basic information on reporting defects in vehicles and vehicle parts. In addition, attention is drawn to information and details that must be observed in order to process your enquiry.

To access the electronic registration form, you must enter your e-mail ad-

dress and accept the data protection regulations. In addition, you will be asked to enter a short captcha security question.

You can then proceed to the next step by clicking on the “Send” button.

2

Reference to Notification E-Mail with Link to the Application

Once you have successfully entered your details, a personalised link will be sent to your e-mail address within 10 minutes. The e-mail will contain a notification with

further information and instructions. At the end of the message there is a “Go to form” button. This link opens the notification form for further data entry.

3

Entering the Information

The notification form guides you step by step through the deficiency notification.

First of all, your information is recorded in the corresponding form fields so that KBA can contact you in case of questions. You can then specify the circumstances under which the fault or defect occurred, how it was perceived and what the consequences were.

On the basis of this information, KBA will assess which further measures may need to be initiated on the basis of Regulation (EU) 2018/858 or Regulation (EU) 2019/1020.

Finally, you will be asked to provide detailed identifying characteristics of the vehicle or vehicle part in order to specify your enquiry.

You also have the option of entering details of previous accident damage and repairs as well as deviations from the original condition (modifications) in an optional free text field.

If available, you can then upload data and documents relating to the vehicle and the specified vehicle registration number.

4

Close Message

To submit the form, you must fill in all mandatory fields.

In addition, consent must be given to the data protection declaration as well as consent to the forwarding of these data

and files to the manufacturer for the classification of the defect. When the notification is sent, the data is transferred to the KBA database and the notification is considered officially submitted.

Market Surveillance: How Does it Actually Work?



The Market Surveillance Department at KBA ensures that vehicles and vehicle parts comply with the applicable regulations for placing them on the market and that no risks emanate from these products. In the case of a gas vehicle, whose gas tank burst during refuelling, the market surveillance department of KBA carried out detailed investigations. KBA immediately initiated investigations to clarify the cause of this incident. Own tests of the vehicle and the structures involved revealed significant corrosion damage. The corrosion damage was located in areas of the gas system that were not easily visible. As a result, this defect could not be detected during the previously scheduled periodic technical inspection of the vehicle. In order to protect other vehicle owners from this danger, KBA requested the responsible manufacturer to take remedial action after the defect had been detected. In line with KBA's risk assessment, the manufacturer immediately drew up an action plan to remedy the risk. If the manufacturer had not taken any remedial action, KBA would have ordered measures to

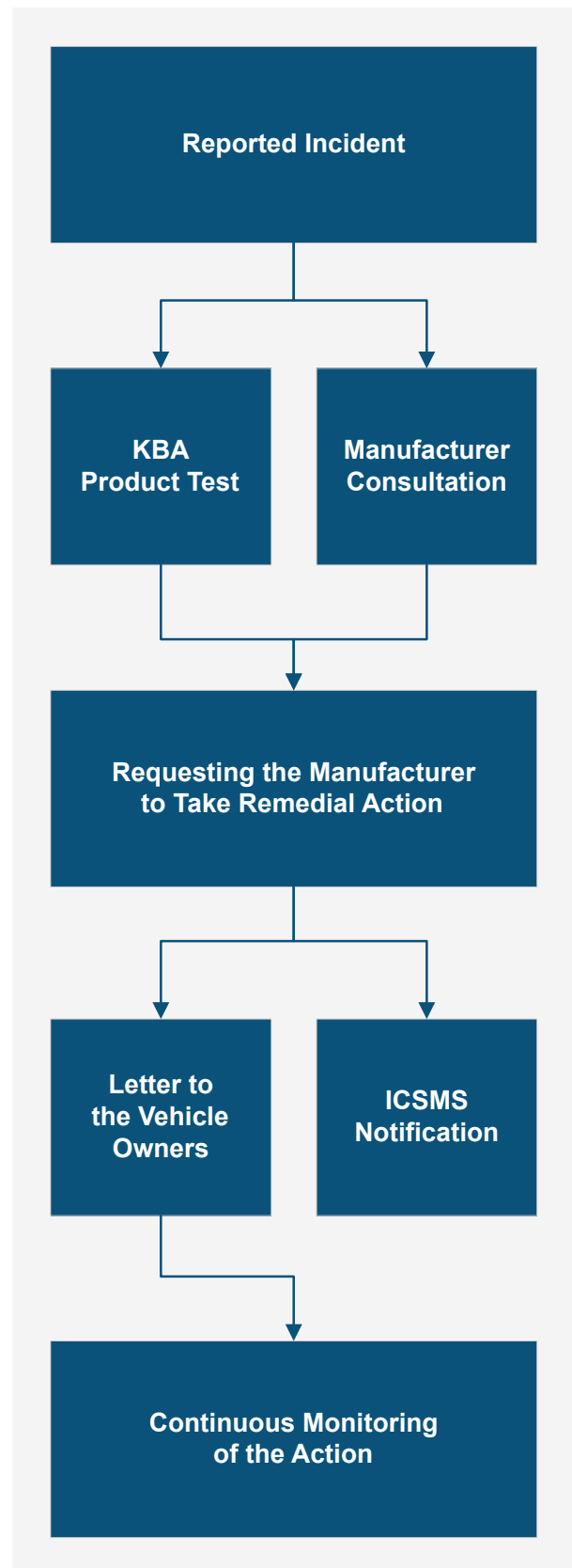


Parts of a burst gas pressure vessel

eliminate the risk. KBA also arranged for all vehicle owners to be informed of the risk situation. Parallel to this information to the citizens in Germany, KBA sent out a notification by means of the Information and Communication System for Market Surveillance (ICSMS), which informs the market surveillance authorities of Europe. ICSMS is used for the efficient exchange of information between the market surveillance authorities of the Member States of the European Union and thus enables a uniform procedure in the event of serious risks or non-conformities. In the context of a recall

carried out in Germany, vehicle owners are notified of the existence of a defect in their vehicle by means of the contact data of the Central Vehicle Register (ZFZR). In the event of a serious risk, the time required to remedy the defect may be very short in order to ensure the safety of vehicle owners. The rectification of a defect usually takes place in the manufacturer's workshops. If not all vehicles have participated in the recall after the first notification, KBA will issue a reminder to their owners. If, after several notifications, no workshop has been visited, the vehicle will be taken out of service by the local registration authority. Only by taking the vehicle out of service can it be ensured that dangerous situations are effectively eliminated. In the example described above, this has already been done. After expiration of the time period for the elimination of the defect in December 2022, this obligatory step has been completed.

In the European and international environment, this consistent use of the central register to enforce recall procedures is a distinguishing feature of KBA, which means that Germany has the recalls with the highest implementation rates in Europe.



Public Information

KBA has set up an information service to which anyone can send their questions about KBA-initiated recalls. In this way, KBA ensures that questions relating to recalls and all other issues concerning the market surveillance of motor vehicles can be answered in a transparent and personal manner.

The following shows the number of questions answered by KBA's public information service in the past years.



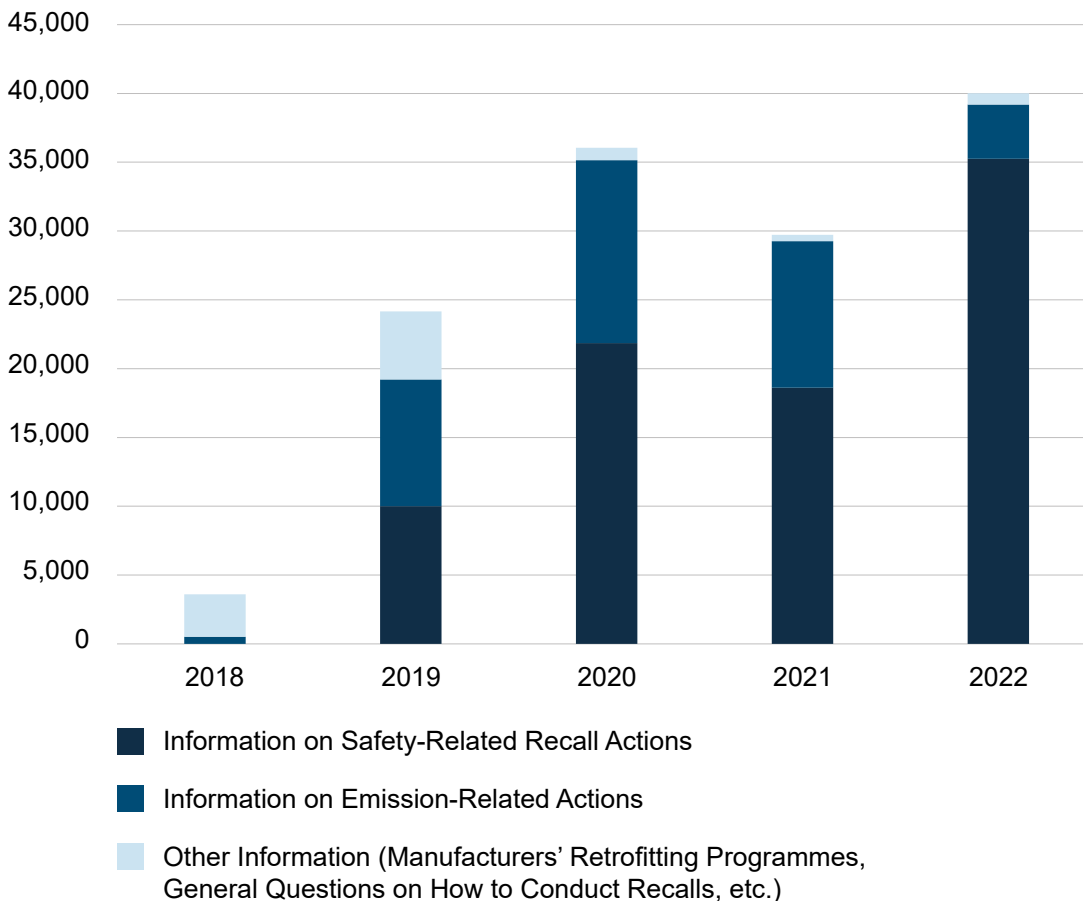
Questions? Give us a call!

+49 461 316-1099

Monday – Thursday
08:00 – 16:00

Friday
08:00 – 14:00

Public Information 2018 to 2022



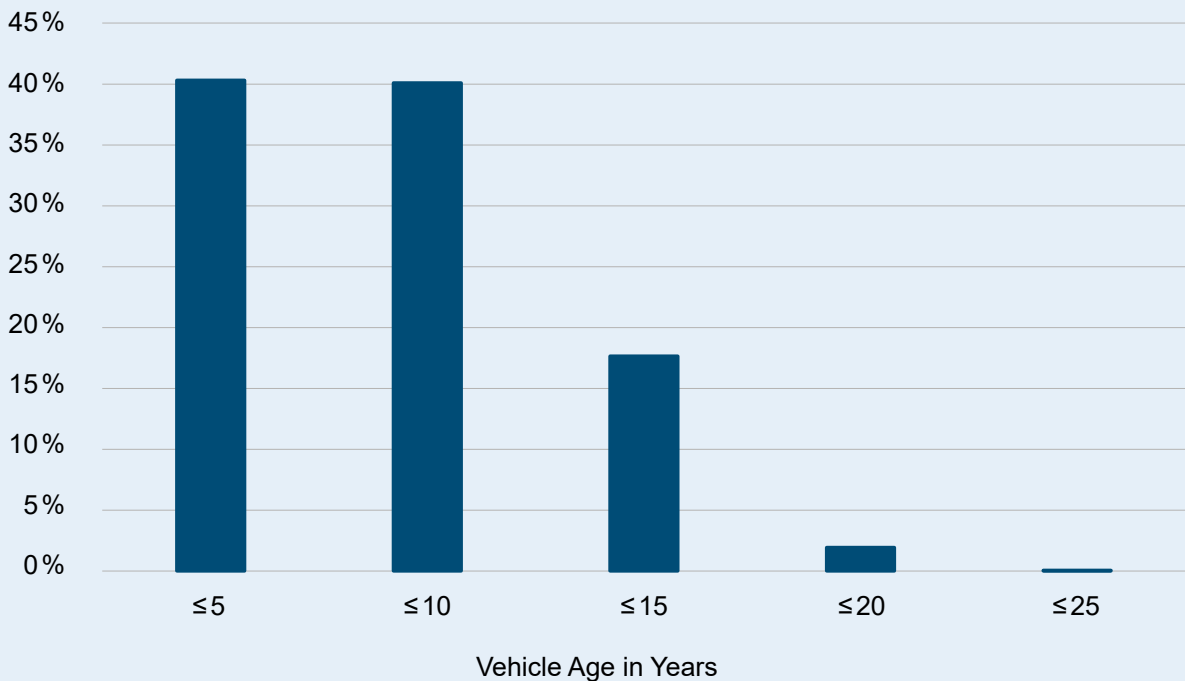


How Old Are Recalled Vehicles?

Vehicles are recalled if they do not comply with the applicable European requirements. On the one hand, vehicles may not comply with the functional requirements for vehicle systems or, on the other hand, they may pose a danger to vehicle owners or road traffic. Systematic faults are often noticed early on, which is why recalls

are more frequent in the first five years of a vehicle's life. However, as part of the continuous monitoring of products, vehicles are also subject to recalls later in their life. The following chart shows the percentage of recalls by vehicle age for the past year:

Percentage of Recalled Vehicles by Vehicle Age



/ Sanctions



499
Fining Procedures

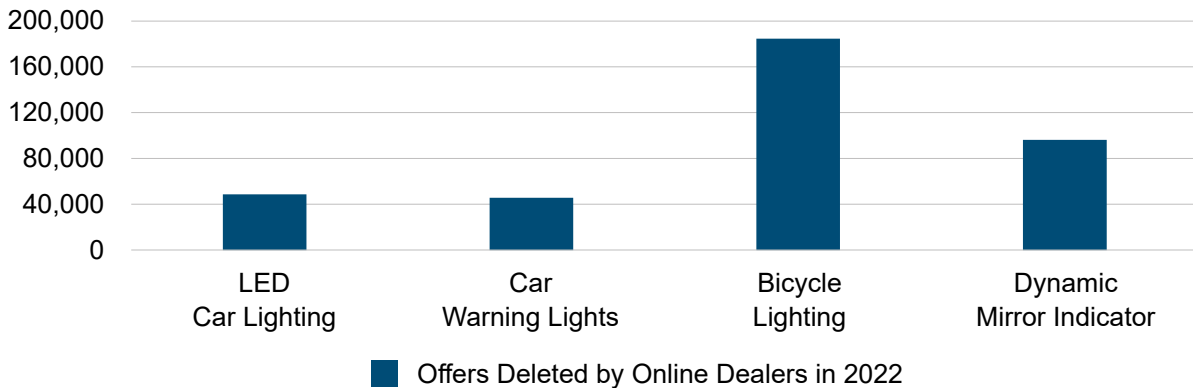
in 2022 Against Manufacturers and Distributors who have Sold Unapproved Vehicles and Parts.



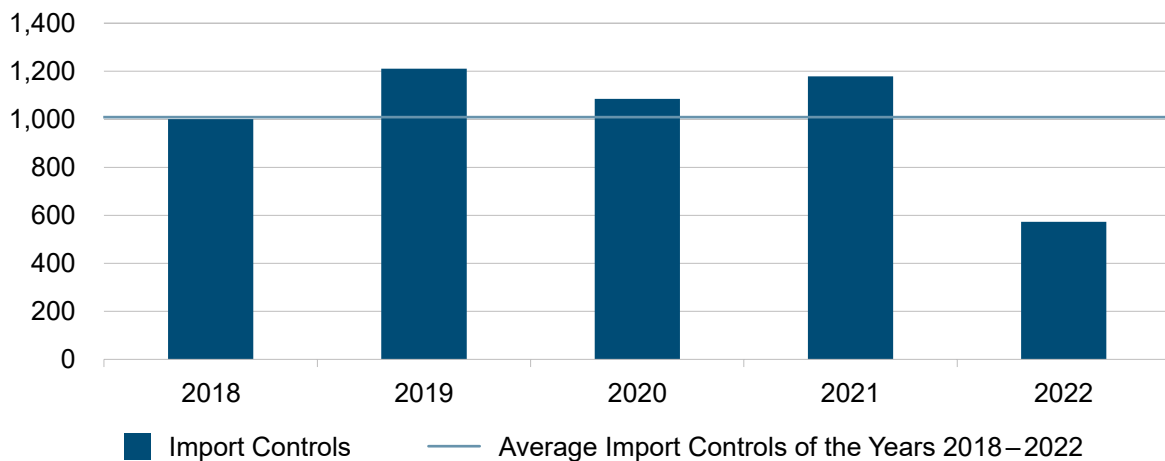
573
Import Controls

in 2022, KBA Examined the Import of Vehicles and Parts to Determine whether They Posed Serious Risks to Health and Safety or Violated European Law.

Offers Deleted by Online Distributors in 2022



Import Controls 2018 to 2022





When and Why Are Sanctions Being Issued?

Vehicles and vehicle parts can pose risks to safety, health and the environment if the legal requirements are not met. KBA therefore acts against various violations with fines to protect consumers. These administrative offences are prosecuted in Germany by KBA. In addition, KBA cooperates with the customs authorities in the context of import controls at the exter-

nal borders. Customs checks products entering the EU market and contacts KBA in the event of possible deviations from the regulations. As the market surveillance authority, KBA then checks whether the products in question meet the requirements of EU law or pose a risk and decides on the import.

Sanction Procedure

There are a number of requirements that must be met in order to place vehicles and vehicle parts on the market. The market is constantly monitored by KBA and infringements are punished with fines to prevent risks to safety, health and the environment. Sustainable impact can only be achieved through continuous market surveillance. Experience shows that in product areas where there is no continuous monitoring, large numbers of non-permitted products very quickly enter the market. The background to this is that these can regularly be produced with less development effort. Online distributors recognise their responsibility and cooperate with KBA. Methods of control and identification of products that do not comply with the

requirements for placing on the market have been implemented by both KBA and online distributors. Offers that have already been deleted by order of the market surveillance authorities are examined and removed if suspicion is confirmed. For example, four product groups have been highlighted in the year 2022 to illustrate the scope of the offers removed from the online market. In 2022, KBA mainly imposed administrative fines on product managers who placed vehicles or vehicle parts (such as lights or frontal protection systems) on the market without the required type approval. KBA forwards information on criminal offences such as forgery or fraud to the competent public prosecutor's offices.

Import Controls

Anyone who wants to make their products available on the European market must ensure that the legal requirements are met. Upon importation, customs inspect products and, in cases of suspicion, forwards information about the products to KBA, which then checks compliance with the regulations. If the product does not comply with the requirements, customs refuses its import. In 2022 573 custom

control notifications were registered, which is significantly lower than the five-year average of 1,010. This change is, amongst other things, caused by a reduction in trade at the EU's external borders and structural changes at customs. In about 52 percent of the products inspected, KBA rejected the import, which is why these non-conforming products did not enter the EU internal market.

/ What Else Was Important

Cooperation Agreement with the Federal Highway Research Institute (BASt)



On 17 May 2022, the presidents of the Bundesanstalt für Straßenwesen (BASt) and the Kraftfahrt-Bundesamt (KBA) signed a cooperation agreement with the aim of working even more closely together in future and thus making the respective activities of BASt departmental research facility and KBA market surveillance authority for safer road traffic and environmentally friendly vehicles even more effective and interlinking them more directly.

Both authorities are part of the Bundesministeriums für Digitales und Verkehr (BMDV) and make important contributions to increasing road safety and environmental protection in Germany and Europe. As a federal authority in the field of motor vehicles, KBA has a wide range of expertise and infrastructure to protect the environment and ensure the safety of ve-

hicles and vehicle parts. BASt is the central research institution of BMDV.

The increasing level of automation in today's vehicles requires continuous development of test procedures and test facilities for the protection of the driver and the environment. BASt and KBA operate various test laboratories for their respective purposes and maintain various databases with basic information on vehicles and vehicle owners, also for consumer protection and research.

The cooperation agreement bundles this expertise and enables both partners to use their respective strengths in a concentrated and even more efficient way, using synergies in resources and capacities for the benefit of road safety and environmental protection.



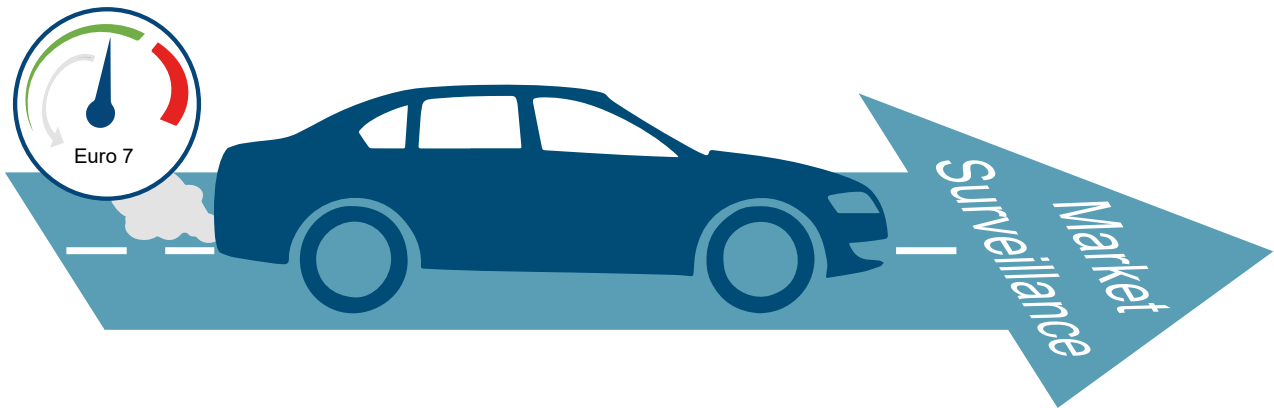
What Are the Specific Focuses of the Cooperation Agreement?

- In order to support market surveillance, BAST provides KBA with its findings from consumer protection tests and research results from tests on new vehicle safety technologies.
- In future, KBA will use the contents of the German In-Depth Accident Study (GIDAS) database prepared by BAST for risk assessments.
- Tests on vehicle safety and automated driving functions will become more frequent, more complex and more elaborate. Both partners will coordinate their respective test capacities together in the future.
- Both have been involved in regulation-preparing research and tests on connected driving (Car2X) for years. At the Test Centre in Leck (TeCeL), KBA is currently creating new test facilities that will be used by a cross-institutional working group.
- KBA and BAST will intensively exchange and complement each other in the development of regulations on motor vehicle emissions.
- As with Euro NCAP, BAST also represents BMDV as a member of Green NCAP. In future, KBA will take over the obligatory Green NCAP vehicle tests in its new laboratory for motor vehicle emissions.
- As a result of the amendment to the Road Traffic Act, data on autonomous driving will in future be available to KBA. The results are of interest to the BAST's scientific research and will be shared.
- As part of the type approval process, KBA has access to national and international approval documents and test reports. Within the limits of the law, BAST may access this data on an ad hoc basis for the purpose of research for the preparation of regulations.

Details of the cooperation agreement between BAST and KBA can be found at www.kba.de or under this QR code (German content):



What Does Euro 7 Mean from a Market Surveillance Perspective?



Last year, the European Commission presented its proposal for the Euro 7 emission standard. This includes a wide range of intended innovations, such as:

- Consolidation of the regulations for passenger cars, vans, buses and trucks into a uniform set of regulations
- Fuel and technology neutrality (same limit values; regardless of whether the vehicle is powered by petrol, diesel, electric drive or alternative fuels).
- New emission limit values e.g. inclusion of a limit value for ammonia (NH₃)
- Short-distance journeys (commuter traffic) and ambient temperatures of up to 45°C are now covered by the emission tests
- additional particulate emissions from brakes and regulations on microplastic emissions from tyres

The European Commission's proposal for the Euro 7 emission standard also contains a detailed list of optional and mandatory contents

to be checked by market surveillance. These include the following test contents:

- Gaseous pollutants and particle number (PN) in real driving emission (RDE) tests
- Evaporative emissions (SHED test – determination of evaporative emissions in a sealed enclosure)
- Refuelling emissions
- Battery lifetime
- Protection against manipulation, security and cyber security
- Geofencing technologies
- Emission test of the brake abrasion

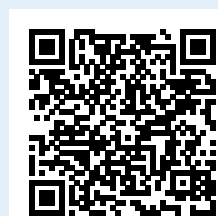
As a result of the new requirements of the future Euro 7 emission standard for the market surveillance of vehicles, a further expansion of the test infrastructure in terms of measuring instruments and/or test facilities is necessary. Without a corresponding expansion of the test infrastructure, it will not be possible to check compliance with all the requirements that are expected to be added by the Euro 7 emission standard.

It is intended, for example, that in addition to the evaporation emissions that have occurred up to now, evaporation effects that occur during refuelling of the vehicle are also limited. For this reason, the existing test equipment must also be able to map the refuelling process. In future, functions will be activated and deactivated based on the vehicle location – so-called “geofencing”. For this reason, KBA’s test site must be designed in such a way that proof of compliance with an operating range can be provided. Currently, it is also being considered to include the emissions caused by tyre abrasion in the specification, which will probably also be the subject of future market surveillance tests.

The necessary implementing regulations, which define the test concepts in a uniform manner, are currently being developed at the regular meetings of AGVES (Advisory Group Vehicles Emission Standards). Among other things, the requirements and drafts are discussed at these meetings.

As soon as the concrete requirements are available, the market surveillance authorities will also need to act in order to prepare for the extensive and partly new tests of Euro 7. The European Commission’s proposal for Euro 7 is currently being discussed with the Member States. The exact definition of the future requirements and the timetable for implementation therefore remain to be seen.

Details of current plans for the Euro 7 emissions standard can be found at commission.europa.eu or under this QR code:



European Court of Justice Rulings on Temperature-Dependent Defeat Devices



Court of Justice of the European Union (Source: G. Fessy © CJUE)

The evaluation of emission strategies on the basis of measurements and software analyses is one of the main tasks of KBA's market surveillance. In the past, KBA called on manufacturers to carry out recalls, if KBA found that they were using inadmissible emission strategies.

By judgement of European Court of Justice (ECJ) of 14.07.2022 (Cases C-128/20, C-134/20, C-145/20) and 08.11.2022 (Case C-873/19), ECJ ruled that the temperature-dependent functions in these products constitute defeat devices and provided guidance on the permissibility of such functions:

- The protection of “add-on components such as exhaust gas recirculation valve (EGR valve), EGR cooler and diesel particulate filter” does not justify a defeat device, unless it is proven that this device is exclusively necessary to avoid the imminent risks to the engine in the form of damage or accident caused by a malfunction of

one of these components, risks which are so serious that they constitute a concrete danger during the operation of the vehicle equipped with this device.

- A defeat device which, under normal operating conditions, would have to function for the majority of the year in order to protect the engine from damage or accident and to ensure the safe operation of the vehicle, could not be covered by the exception for admissibility.
- A defeat device is “necessary” within the meaning of this provision only if, at the time of EC type-approval of the device or of the vehicle fitted with it, no other technical solution is capable of preventing direct risks to the engine in the form of damage or accidents which present a real endangerment when the vehicle is being driven.

The ECJ guidelines are taken into account in KBA's market surveillance and type approval.

/ Outlook to 2023

Expansion of the Test Infrastructure

KBA has further expanded its test infrastructure in 2022. Continuous adaptation to the requirements of current and future legislation is necessary in order to test the technical requirements of new technologies, such as automated and autonomous driving functions. For efficient, safe and non-destructive testing in all test scenarios, mobile test dummies (targets) were tested during 2022. Further development of the test site includes the extension of the noise test area with a surface structure described in European Regulation and the upgrading of existing facilities for lighting equipment testing.

In an increasingly networked Europe, KBA communicates these tests and the measures taken to European Commission, the other EU Member States and the citizens. With a share of over 80 % of all ICSMS reports in the vehicle sector throughout EU, KBA makes a significant contribution to vehicle safety and environmental protection in Europe. KBA's tests are based on the testing specifications communicated by European Commission and, in particular, on its own market analyses, current reports and information from the public, authorities and non-governmental organisations. KBA bundles this information into a test plan and carries out most of the official product tests in the European vehicle market.

KBA's test expertise and infrastructure are used in cooperation projects to ensure the safety of citizens and the environment. KBA's experience contributes to the further development of national and international legislation.

Expansion of the Recall Database

KBA is aware of the growing information needs of the public and is making its test results and current recall information available digitally. The expansion of the recall database will continue in 2023 and is scheduled to go live in the course of 2024. It will be a key element in providing up-to-date information to any enquirer.

Extended Sanction Possibilities

The protection against risks emanating from non-approved products will continue to be one of the central topics of KBA's market surveillance. With the entry into force of the Regulation on prosecution of infringements of EU type approval law (EU-Typgenehmigungs-Bußgeldverordnung – EU-Typ-BV) in March 2023, the possibilities for action in the area of sanctions have expanded.

In 2023, KBA will continue to ensure that the three pillars of market surveillance (investigations, recalls and sanctions) are strengthened and the associated processes are optimised in order to guarantee the safety of citizens, environmental protection and fair competition.

/ Legal notice

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