Resolution on damage repair for vehicles with driver assistance systems

The following document was translated by Allianz Center for Technology from the German original text „Resolution zur Schadeninstandsetzung bei Fahrzeugen mit Fahrerassistenzsystemen“ by the German Commission for Paint and Bodywork Repair, dated March 3, 2020 (see the following link: Resolution zur Schadeninstandsetzung bei Fahrzeugen mit Fahrerassistenzsystemen)

Over the last ten years, a large number of driver assistance systems have established themselves on the market and market penetration is increasing continuously across all vehicle classes.

The range of systems includes comfort systems such as cruise control, warning systems (e.g. lane departure warning) as well as systems that actively intervene in dangerous situations such as front autonomous emergency braking systems. With all systems currently available on the market (as of March 01, 2020), the responsibility for driving the vehicle lies with the driver (SAE levels 0 - 2). In addition, the systems can generally be overridden by the driver, exceptions are only made in emergency situations for very short time periods (e.g. ESP brake intervention). In the near future, we expect systems that control the vehicle in defined operational domains, e.g. on the motorway, in a highly and fully automated manner (SAE levels 3 & 4).

Various analyses by international accident research show a positive influence on the frequency of accidents and thus on road safety through a number of these driver assistance systems. Among other things, ESP, emergency braking systems and lane departure warning systems have already been able to prevent numerous accidents, including very severe ones, and have thus saved lives. In individual cases, however, driver assistance systems themselves can also be the cause of accidents, for example if the driver assistance system is triggered incorrectly or intervenes incorrectly without the driver being able to override and correct this in time.

Due to the criticality of driver assistance systems, it is essential that they are in flawless technical condition at all times, especially after damage repair. Depending on the vehicle manufacturer, vehicle model or even model generation, this may require calibration work[1] to ensure that the driver assistance systems function correctly.

Due to the foreseeable strong increase in market penetration of safety-critical driver assistance systems, their consideration is becoming a standard process of damage assessment and repair.

[1] Calibration work is used as a synonym for all adjustment work that is required processed on driver assistance systems sensors

This statement of the German Commission for Paint and Bodywork Repair addresses, from a cross-sectoral perspective, the procedure and framework conditions for providing all customers with correctly and safely repaired vehicles with regard to driver assistance systems at all times.

Need for calibration work and procedure

Investigations on the calibration of driver assistance systems by various institutes (including RCAR members) worldwide show that a missing or incorrectly performed calibration can in some cases have considerable negative effects on their safety-relevant function. Among other things, this can lead to an incorrect interpretation of the environment with resulting incorrect or missing warnings and even accidents. The professional performance of all technically required calibration work according to the manufacturer's specifications is therefore necessary to ensure error-free operation.

In a specific case, it is therefore essential to first record which driver assistance systems are installed in the respective vehicle. This is possible for the majority of vehicles across manufacturers by means of a query using the vehicle identification number (VIN) and is recommended as a priority by the German Commission for Paint and Bodywork Repair. In addition, or for vehicles for which a VIN query is not feasible, the equipment features can be checked using the current manufacturer documentation. The aim of any identification method must always be to achieve the most complete possible determination of the vehicle equipment, especially with driver assistance systems.

The original vehicle manufacturer's information is decisive for the concrete requirement and the corresponding specifications for the procedure. These are the yardstick of action for all those involved in the damage process. Taking into account the manufacturer's specifications, it may be necessary under certain circumstances to check the calibrated driver assistance systems in defined driving operation.

If calibration is not carried out or is carried out incorrectly, this can pose a considerable liability risk for all those involved in the process in the event of a subsequent accident (co-) caused by it.

Diagnostic capability & workshop equipment

Currently, depending on the vehicle manufacturer or supplier, there are sometimes very different specifications on the market with regard to procedures, required working hours and workshop equipment.

In the opinion of the German Commission for Paint and Bodywork Repair, in future all relevant sensors and control units for driver assistance systems should be capable of being diagnosed and should be able to be read by diagnostic devices approved or recognized by the vehicle manufacturers. Meaningful error messages or guided troubleshooting, supplemented by environmental data (e.g. date, time, mileage, driver assistance system status, vehicle speed, etc.) help to determine the correct repair procedure and enable documentation. In addition, these data can be used to clearly assign an error code to the damage event.

The Commission strongly recommends the use of workshop equipment recommended by the vehicle manufacturer or equivalent workshop equipment for diagnosis and calibration that meets the manufacturer's specifications.

The German Commission for Paint and Bodywork Repair considers standardization across brands to be necessary in order to reduce complexity and simplify the work of all those involved in the claims process and enable more efficient processes.

Comprehensive and comprehensible documentation

To ensure transparency, the workshop should confirm and document properly performed calibration work to the client. Diagnostic systems use a protocol to document the necessary work steps and also the time required for these steps. The logs are thus a mandatory part of the repair documentation in order to fully document the work performed and the time required for it.

Likewise, the necessary additional work required for the fault-free functioning of driver assistance systems should already be pointed out to the customer during the damage assessment in the course of preparing cost estimates and damage reports. Documentation is also useful for this. In the case of fictitious invoicing (cash settlements), the customer should be made aware of the necessary calibration work with regard to road safety (owner and driver responsibility).

In view of the complexity and constantly changing specifications, close cooperation between all parties involved in the claims process (customer, workshop, insurance company) is recommended in order to ensure smooth processing as well as proper, professional and safe repairs in accordance with the manufacturer's specifications.

In addition, the German Commission for Paint and Bodywork Repair recommends documenting decisive events (e.g. calibration, system interventions, improper deactivation not provided for by the manufacturer, error messages, etc.) in the vehicle or backend in order to clarify repair routes and legal aspects.

The verification of the proper condition of driver assistance systems should be taken into account during the periodical technical inspection and should be easily possible.

Qualification of employees

Permanent and continuous further training (including certification, if applicable) and employee qualification are indispensable in view of the technical development in the field of driver assistance systems and must cover all trades (bodywork, mechanics, paint, electrics, technical experts, etc.) in order to be able to adequately meet the increased and further increasing requirements.

Future automation of driving

Increasing vehicle automation (from SAE level 3) leads to a further growing importance of a safe process, since among other things the liability of automated vehicles will shift from the driver to the vehicle (vehicle manufacturer / repair shop / ...).

This resolution was decided unanimously on March 03, 2020 by the members of the German Commission for Paint and Bodywork Repair:

- Allianz Versicherungs-AG
- Audatex AUTOonline GmbH
- Autovista Group International AG
- Axalta Coating Systems Germany GmbH & Co. KG
- AZT Automotive GmbH
- Bayerische Motoren Werke Aktiengesellschaft (BMW)
- Bundesfachgruppe Fahrzeuglackierer (BFL)
- Bundesverband der freiberuflichen und unabhängigen Sachverständigen für das Kraftfahrzeugwesen e.V. (BVSK)
- DEKRA SE
- Deutsche Automobil Treuhand GmbH (DAT)
- Generali Deutschland AG
- Gesamtverband der Deutschen Versicherungswirtschaft e.V. (GDV)
- Honda Motor Europe Ltd
- IRS Holding GmbH
- KTI Kraftfahrzeugtechnisches Institut und Karosseriewerkstätte GmbH & Co. KG
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- Schwacke GmbH
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- VOLKSWAGEN AG
- Zentralverband Deutsches Kraftfahrzeuggewerbe e. V. (ZDK)
- Zentralverband Karosserie- und Fahrzeugtechnik e.V. (ZKF)