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ELITE TRUCK & VAN BODY REPAIR MEMBER

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UK Commercial Vehicle ADAS Guidance (CVAG)

for the safe repair & service of ADAS equipped commercial vehicles

OVERVIEW

What are Advanced Driver Assistance Systems (ADAS)?

Advanced Driver Assistance Systems (ADAS) offer drivers active safety support through a range of sophisticated features.

Many vehicles on UK roads are now equipped with various ADAS technologies designed to enhance driving safety and convenience.

These features play a critical role in supporting essential systems like braking and steering, making their correct and effective operation even more vital.

ADAS functionality relies heavily on sensors that continuously monitor the vehicle's surroundings with precision, making these sensors a crucial aspect of the repair and maintenance process.

What are examples of ADAS features?


Advanced Emergency Braking


Traffic Sign Recognition

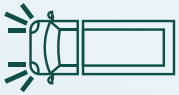

Adaptive Cruise Control


Blind Spot detection


Lane Keep Assistance


Cross Traffic Detection


Digital Door Mirrors


Adaptive Headlamps

OVERVIEW

Why is the CVAG required?

Since calibration requirements differ from one vehicle to another, it is crucial to follow the vehicle manufacturers' technical specifications to restore the proper function of ADAS features. This ensures the vehicle's safety and functionality remain uncompromised.

Why is the guidance required?

It is essential to offer guidance to support those involved in vehicle repair, servicing, or maintenance, ensuring they fulfil their responsibility to restore vehicles to their pre-accident or pre-repair operational condition while complying with the UK Insurance Industry Requirements for Managing ADAS in Repair.

Note: This guidance is not a substitute for the specialised training and knowledge required by repair organisations to carry out safe and effective repairs.

Repairers are expected to apply their expertise to verify that any information, procedures, processes, or specifications used during the repair are appropriate and that all relevant repair instructions and guidelines are strictly followed.

The VBRA accepts no liability for any loss or damage arising from reliance on this guidance (including negligence), except in cases of death, personal injury, or other losses that cannot be legally excluded or limited.

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- Apollo Vehicle Safety

OVERVIEW

When Does the CVAG Apply?

The requirements for inspection, realignment, and calibration must be taken into account during any repair, service, or maintenance procedure involving:

ADAS sensors,

Components that could influence the operation or functionality of ADAS sensors, or

Vehicle geometry including structural alignment

Where indicated, post-repair inspection, realignment, and calibration must be carried out to verify that the sensors operate within the vehicle manufacturer's technical specifications.

For example, CVAG applies in these scenarios:

Safe removal, installation, repair or aligning of any parts likely to affect the operation and functionality of ADAS sensors.

Making any body geometry changes or changes to the vehicle's wheel alignment, suspension geometry or ride height.

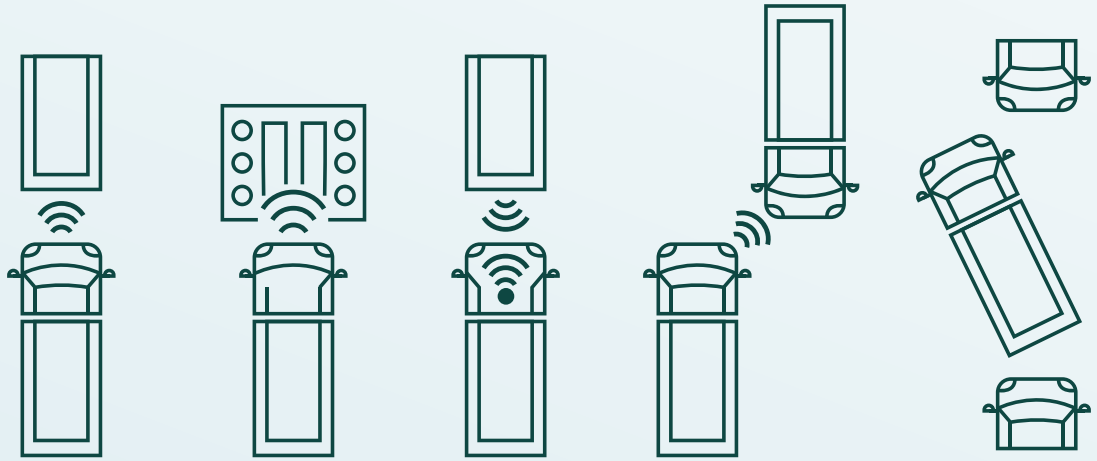
Realigning, replacing or refitting any ADAS sensors or associated vehicle parts likely to affect the operation and functionality of ADAS sensors.

SCOPE OF THE CVAG

What does the CVAG say?

A repairer must always:

- Determine and document the presence or absence of ADAS on the vehicle.
- If ADAS is present, ensure the repair procedure explicitly states whether inspection, realignment, and calibration are necessary, along with the rationale.
- Perform all required inspection, realignment, and calibration tasks as specified in the repair guidelines.
- Ensure that inspection, calibration, realignment, and road tests are conducted by a qualified and currently competent individual. i.e. ADAS (IMI Accreditation AOM 230) or GQA Level 3 Award 603/6850
- Validate that calibration results confirm the sensors are operating in accordance with the vehicle manufacturer's specifications.
- Maintain fully verifiable and auditable records, providing copies to the Insurer, Vehicle Owner, or Fleet Manager as required.



DEFINITIONS

What are the definitions of key terms associated with the CVAG or guidance?

ADAS – Advanced Driver Assistance Systems.

Calibration – The process of verifying that ADAS sensors are operating correctly in accordance with the vehicle manufacturer's technical specifications.

Static Calibration – The adjustment of ADAS sensors using specialised calibration equipment in a controlled environment. This process may involve aiming targets, wheel alignment tools, and/or diagnostic equipment, and is completed without driving the vehicle.

Dynamic Calibration – The process of calibrating ADAS sensors by driving the vehicle according to the manufacturer's prescribed procedure, ensuring proper sensor functionality.

Self-Calibrating – The automatic adjustment of ADAS sensors without requiring dedicated calibration tools or a specific driving profile. However, a defined process may still be necessary—consult the vehicle manufacturer or ADAS equipment supplier for guidance.

Diagnostic Tool – A device used to communicate with, diagnose, and, if required, reprogram or initialise vehicle control modules.

Calibration Equipment – The tools and devices used alongside a diagnostic tool to facilitate and verify the calibration process.

Asset Owner / Work Provider – The party commissioning the repair work, which may be a lease company, finance provider, or other entity responsible for the vehicle.

Repairing Organisation – The company engaged to perform the repair, servicing, or maintenance work on behalf of the asset owner or work provider.

Repair Instructions – A structured set of guidelines detailing the steps required to complete a specific vehicle repair, service, or maintenance procedure.

DEFINITIONS

What are the definitions of key terms associated with the CVAG or guidance?

Competent Person – An individual who has successfully completed and maintains a current competency-based assessment in ADAS calibration, as certified by vehicle manufacturers or accredited awarding bodies.

A competent person must be capable of:

- Identifying ADAS sensors and determining when calibration is required.
- Conducting inspection, realignment, and calibration of ADAS sensors and associated components.
- Understanding and fulfilling the requirements for verifiable documentation related to ADAS sensor calibration.
- Proof of competence shall be documented and readily available.

Vehicle Manufacturer's Technical Specification – The documented specifications outlining the operational parameters, repair methods, and calibration requirements for a given system or feature.

- Note: This information is available under type approval regulations, Relevant documentation accessible via the EU Commission's website (EU 2018/858).

Windscreen – Primarily refers to the front windscreen but may also include other vehicle glazing where ADAS sensors are mounted.

Relevant – Directly associated with or applicable to the specific task or process being performed.

PROCESS FOR MANAGING REPAIRS

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What is the recommended process?

Repairing organisations should ensure a vehicle is restored to full and safe functionality post repair, including ADAS sensors functioning to vehicle manufacturer's technical specification, by:

Referencing repair instructions

Using their own experience and expertise in undertaking work, exercising the required duty of care.

Considering particularly the viability of repair to windscreens, bumpers, Door Mirrors, grilles or other body panels in front of or likely to affect the operation and functionality of ADAS sensors.

Following the correct methodology to confirm the ADAS sensors are functioning within the vehicle manufacturer's technical specification prior to vehicle hand over.

Inspection, calibration and realignment of ADAS sensors, carried out by currently competent persons, using equipment that will produce auditable and verifiable evidence of a successful calibration.

Where a repairing organisation does not have the capability to carry out inspection, realignment and calibration of a specific vehicle, or a specific sensor on a vehicle, then this work should be outsourced to 3rd parties who can meet the criteria of the CVAG.

Where research for repair guidance has been exhausted, and functionality cannot be proven through systemised calibration confirming performance to vehicle manufacturers technical specification, then advice should be sought from the responsible VM.

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ADAS PROCESS FOR IDENTIFICATION & RECORDING

Pre-Scan Electronics for Estimate

Vehicle check includes ADAS pre scan.

ADAS is identified on job card Pre Scan is scanned and copy placed into estimating platform.

Pre-Scan Reviewed when Compiling Est

VDA verifies that ADAS fitted to vehicle & checks methods to determine if calibration is required.

Calibration required

Check if we can complete in house - if not outsource.

Bodyshop System to be Updated

ADAS calibration requires Updated on Bodyshop Management System to ease recording.

- ADAS not fitted
- ADAS fitted but does not require calibration
- ADAS fitted and requires calibration in/out

Tech Checks Scan and Updates VDA with Calibration Y/N

Tech amends job card and updates VDA.

If the job card is amended, then the VDA needs to research methods for ADAS calibration requirements such as Geo adjust etc.

VDA Updates Job Card, Estimating & Bodyshop Management System

Job Complete

VDA attaches calibration docs to Bodyshop Management System along with estimating platform.

- All Vehicles require full system scan at time of damage assessment
- Methods to be researched on every job and if there is no clear guidance refer to vehicle manufacturer or method provider
- All jobs to be recorded on Bodyshop management system
- Where there is doubt on the need to calibrate for ADAS refer to work provider in house engineer verify and acknowledge decision
- Save all scans onto estimating platform to enable transparent auditing

TRIAGE & DAMAGE ASSESSMENT

What should I consider when assessing a vehicle for repair?

- Assess whether the vehicle has active ADAS sensors fitted, which systems they are enabling, and clearly identify the locations of the sensors.
- Assess the capability of the repairing organisation to manage the process.

Pre-Repair Considerations

- Before commencing any repair, servicing, or maintenance work that may impact ADAS sensors, evaluate your ability to carry out the necessary procedures effectively.
- Determine whether the vehicle is equipped with active ADAS sensors, identify the systems they support, and confirm the sensor locations using the following methods:
- Directly consulting the Asset Owner or Work Provider.
- Researching manufacturer fitment data for the vehicle model.
- Using third-party VIN or registration lookup tools to verify ADAS fitment.
- Conducting a physical inspection of the vehicle—refer to Repair Planning for further guidance.
- Utilising diagnostic tools to retrieve vehicle data and confirm installed ADAS sensors.
- If the vehicle is not equipped with ADAS sensors, standard repair, servicing, or maintenance procedures may proceed. Ensure that the absence of ADAS sensors is recorded for audit purposes, confirming that no inspection, realignment, or calibration is necessary.
- When ADAS sensors are present, identify which sensors are likely to be affected by the repair, servicing, or maintenance work and document this for audit purposes.
- For each ADAS sensor identified as potentially impacted, verify and record your capability to perform the necessary inspection, realignment, and calibration. Ensure the following details are documented:
- The identity of the currently competent person performing the calibration, along with proof of their current competency, and evidence that they actively maintain their skills and knowledge through ongoing Continuing Professional Development (CPD)
- The specific equipment being used, ensuring it provides auditable and verifiable evidence of a successful calibration.
- If outsourcing the inspection, realignment, or calibration to a third party, record their details and provide evidence that they meet the required standards as per Elite Truck & Van Standard.

REPAIR PLANNING

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What should the repair organisation include in its repair plan before they start a repair?

- All inspection, realignment and calibration requirements.

Developing a Repair Plan for ADAS-Equipped Vehicles

- Perform a visual assessment of the vehicle's interior, including the steering wheel, instrument panel, and other areas, to identify controls that indicate the presence of ADAS functionality. If uncertainty remains after the visual inspection, carry out a pre-repair diagnostic scan.
- If ADAS is detected, document the presence of all relevant sensors for audit purposes.
- Examine the vehicle to determine the most suitable repair or replacement method based on the extent of the damage.
- Obtain and review official repair instructions to ensure the correct repair or replacement procedure is followed, paying close attention to any limitations outlined in the vehicle manufacturer's technical data.
- Identify and record for audit purposes any ADAS sensors that may have been or will be impacted by the repair or replacement process.
- Identify the type of inspection, realignment, and calibration required for each ADAS sensor—whether static, dynamic, self-calibrating, or a combination—by consulting the technical specifications outlined in the repair procedures.
- Note: For dynamic calibration performed on public roads, all relevant safety and legal requirements must be strictly adhered to.
- Assess the repair facility's ability to meet the necessary calibration and realignment requirements.
- Verify that any available calibration equipment is suitable for completing the full vehicle system calibration.
- Note: Equipment suppliers should provide detailed documentation specifying calibration capabilities at a vehicle make and model level, including when support for the vehicle was introduced. This data may be required for audit purposes.
- For vehicles that fall outside the repair facility's calibration capabilities, identify qualified sub-contractors who can perform the calibration in compliance with CVAG requirements.
- Finalise a comprehensive repair plan, ensuring that all required operations are included.

CALIBRATION

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Who should complete a calibration?

All inspection, realignment, and calibration tasks should be carried out by qualified/Competent personnel.

What needs to be documented?

During and after a successful inspection, realignment, and calibration, the following information must be recorded and retained for documentation purposes, and shared with the Asset Owner or Work Provider:

- Name and address of the repair facility
- Name and address of any third-party contractor responsible for the inspection, realignment, and calibration, if applicable
- Vehicle make and model
- Vehicle registration number
- Vehicle identification number (VIN)
- Vehicle mileage
- Date of calibration
- Verification of the competent person's qualifications or proof of competence
- Calibration equipment used for vehicle system adjustments
- Creation and maintenance of auditable, verifiable evidence of calibration results

AUTOMOTIVE INDUSTRY CONSIDERATIONS

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As a Vehicle Manufacturer, How can I support, assist repair facilities to comply with the CVAG?

When developing and releasing vehicles with, or potentially featuring, ADAS capabilities, Vehicle Manufacturers (VMs) could provide:

- Access to vehicle data that helps identify the fitment location of operational ADAS systems and their associated sensors.
- Details on repair scenarios that may necessitate inspection, realignment, and calibration.
- Access to procedures for the inspection, realignment, and calibration of ADAS systems, ensuring the process is auditable, verifiable, and adequate to confirm the restoration of ADAS sensor functionality to the vehicle manufacturer's technical specifications.
- Provision of training materials for ADAS calibration that assess outcomes to validate the competence of the technician.
- Clear ADAS technical specifications to facilitate the inspection of the system's functionality.

AUTOMOTIVE INDUSTRY CONSIDERATIONS

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As a repairer, what steps should I take to comply with the CVAG?

To meet the requirements outlined in the technical sections of this guidance, repairers should:

- Ensure that I possess the necessary capabilities, by investing in the appropriate equipment and training, to comply with the CVAG, or establish a suitable outsourcing process that guarantees all work meets the necessary standards.
- Identify the presence of ADAS sensors and clearly document the findings.
- Conduct thorough research and consult relevant repair instructions, as well as inspection, realignment, and calibration guidelines.
- Ensure that all inspection, realignment, and calibration activities are carried out by personnel who are currently competent in these tasks.
- Complete system inspection, realignment and calibration in accordance with the relevant repair procedure and vehicle manufacturer's technical specification.
- Be able to demonstrate that the calibration of all affected sensors has been completed, and the results of the calibration confirms functionality of the sensor within the vehicle manufacturer's technical specification.