Monitoring Heavy Vehicle Assessments using In-Cabin Cameras

1. Scope and coverage

Registered Training Organisations (RTOs) who have an Accreditation Agreement for Heavy Vehicle Competency Based Assessment (HVCBA) with Roads and Maritime Services (Roads and Maritime) are contractually obliged to monitor and record HVCBA on-road components of Final Competency Assessments (FCAs) / Competency Tests (CTs) via in-cabin video cameras, as specified by Roads and Maritime.

A video camera must be in operation inside the cabin of the heavy vehicle during the FCA/CT in order to capture and record the end-to-end on-road assessment.

Please note that the intention is not to replace the physical audit process but to introduce an additional audit method for ensuring compliance to Roads and Maritime requirements.

2. Purpose and intended outcomes

The objective of this specification is to improve the integrity of the HVCBA Scheme by mitigating fraud and corruption risks through the introduction of in-cabin cameras during heavy vehicle licensing assessments.

The specification seeks to achieve the following benefits:

- Implementation of recommendations provided by the Independent Commission Against Corruption (ICAC)
- Increase transparency in the heavy vehicle licensing assessment process through recording the on-road components of FCAs/CTs
- Prevent fraudulent activities in relation to the issue of heavy vehicle licences
- Facilitate self audits by RTOs on assessments conducted by their assessors
- Enable Roads and Maritime to perform additional audits using video footage captured by in-cabin cameras

Note: This specification should be read in conjunction with the following procedures:

- Guide: HVCBA Standards and Requirements
- Guide: Conducting HVCBA Assessments
- Guide: HVCBA Record Keeping and Data Management

3. Legislation

Monitoring and recording of FCAs/CTs using in-cabin cameras must be conducted by RTOs and their assessors in compliance with all relevant laws including the following:

- Surveillance Devices Act 2007 (NSW)
- Workplace Surveillance Act 2005 (NSW)
4. Responsibilities

- RTOs are responsible for assuring Roads and Maritime that in-cabin video cameras used in monitoring and recording of FCAs/CTs meet Roads and Maritime requirements.
- RTOs are responsible for ensuring assessors are aware of the requirements for in-cabin video cameras for monitoring and recording FCAs/CTs.
- RTOs own video recordings of FCAs/CTs and are responsible for their secure collection, integrity, management, archiving and transmission to Roads and Maritime in accordance with scheme policies, guidelines, procedures and relevant legislation, and any associated costs.
- RTOs are responsible for obtaining their own legal advice in relation to monitoring and recording FCAs/CTs via in-cabin cameras and to ensure that their data management is conducted in accordance with all relevant legislation.
- RTOs are responsible for training their assessors on the use of in-cabin cameras, downloading the video footage and transmission of the video recordings.
- Roads and Maritime has full access rights to FCA/CT recordings on and off-site for the purposes of auditing assessors and RTOs.

Please note:

- RTOs and/or assessors are responsible for purchasing, maintaining and installing in-cabin video cameras. Roads and Maritime are not responsible for these activities or any associated costs.

5. Requirements

Under this specification, RTOs and assessors must comply with the following mandatory requirements in relation to FCAs/CTs:

**Video cameras must:**

- Record video of external driving conditions and cabin interior simultaneously.
- Record an external view of the front of the vehicle showing a wide angle of at least 120 degrees relative to the windscreen and an area at least 5 metres x 5 metres of clear unobstructed view.
- Record at a resolution no less than 640x480 megapixels.
- Record images at a frame rate of at least three images per second from each camera fitted and the images must be of sufficient resolution and sharpness for facial identification of persons in accordance with AS/NZS 4306.2 and in all light conditions.
- Have rolling GPS coordinates i.e. latitude and longitude positions must be continuously displayed on the video file along with GPS tracking throughout the recording.
- Have rolling date and time stamp that must be continuously displayed on the video file throughout the recording.
- Record audio conversations in the vehicle using at least one microphone set to clearly pick up and record conversations between the assessor and applicant inside the cabin.
audio recording should be of a quality and level to record conversations within the operating environment of a heavy vehicle.

- For the interior view in the in-cabin camera, have night vision mode for recording in dark conditions.
- Have a system that can either be wired to the vehicle or powered by an accessory plug.
- If the native video file is encrypted, have a camera system software that is able to convert this file into a windows compatible file format.
- Have a storage device that is large enough to record an entire on-road FCA/CT.
- Have a camera system that is resistant to/from electromagnetic emissions in accordance with AS/NZS CISPR25:2010 or AS/NZS CISPR 22:2008.

**During Operation:**

- An assessor must not start an FCA/CT unless the vehicle is fitted with an in-cabin camera system that is operating in a manner that indicates that the system will be fully operational during the FCA/CT and is not obscured.

- In the event that a camera is identified as being not fully functional during the first 20 minutes of the FCA/CT, the FCA/CT must be rescheduled/repeated once the issue is fixed. Subsequent bookings must be made within a minimum of 1 hour prior to commencement. The subsequent FCA/CT must be conducted by the same Assessor or 48 hours notice will be required for a change of Assessor.

- In the event that a camera is identified as being not fully functional after the first 20 minutes of the FCA/CT, the FCA/CT can be continued, however a **Self-Disclosure of Non-Compliance with In-Cabin Camera Requirements** form must be completed by the assessor and RTO and submitted to Roads and Maritime by the RTO. The assessor must also include a comment regarding the camera non-compliance in the comments section of HVCORS when entering the assessment results.

- The in-cabin camera must be fully operational when undertaking all components of the on-road FCA/CT.

- The Introductory Assessment Script provided by Roads and Maritime in the Guide: Conducting HVCBA Assessments, must be delivered prior to commencement of the on road components and captured by the in-cabin camera, and the Post-Assessment Script provided by Roads and Maritime in the Guide: Conducting HVCBA Assessments, must be delivered at the completion of the on road components and captured by the in-cabin camera, as outlined in scheme procedures.

- In-cabin camera (interior view) must be positioned to capture both the assessor and the applicant simultaneously and record images of persons from the waist up. The camera angle and positioning in Appendix 11.1 provides a guide.

- In the event that the assessment vehicle is supplied by the client, a portable camera must be installed in the vehicle and comply with the requirements.

- The applicant’s current Australian driver licence must be captured in the video recording in such a way that the writing on the licence is clear and legible.

- RTOs should have written procedures that include details on the operation of an in-cabin camera system, including
  
a) the means of compliance with the scheme requirements  
b) how the camera system will be periodically checked, maintained and repaired  
c) how the video recordings will be handled and deleted  
d) how access to video recordings will be controlled; and  
e) who is authorised to access and handle the video recordings downloaded from the system.
Compliance

- On and from 1 December 2014 all requirements in this specification will apply to all NSW HVCBA RTOs and assessors.

- Monitoring and recording of FCAs/CTs by RTOs and their assessors using in-cabin cameras must be conducted in compliance with all relevant laws and the applicant advised as appropriate.

- Before the compliance date of 1 December 2014, RTO business procedures should be reviewed and updated as appropriate, to include:
  a) new responsibilities relating to video monitoring and recording
  b) back-up and storage of recordings; and
  c) recording failures.

- Any non-compliance identified by the RTOs must be informed to Roads and Maritime through the submission of a Self-Disclosure of Non-Compliance with In-Cabin Camera Requirements form within 3 days of the FCA/CT occurring.

- Any non-compliance identified by the assessors must be informed to the RTO within 24 hours of the incident and the RTO in turn must inform Roads and Maritime through submission of a Self-Disclosure of Non-Compliance with In-Cabin Camera Requirements form within 3 days of the FCA/CT occurring. The assessor must also include a comment regarding non-compliance in the comments section of HVCORS when entering the assessment results.

Data Management

- Video recordings in the camera system must be saved to a desktop/laptop computer using the following filename format:
  
  ‘HVCORS booking ID number’_ ‘Applicant’s full name’
  
  Example: 12345_JohnSmith
  
  In the absence of a HVCORS booking ID number, the manual booking reference number provided by Roads and Maritime must be used:
  
  Example: SEP14001_JoanneBrown

- The video recordings must be protected from unauthorised access or loss, and must have the ability to be retrieved and made available when needed and not able to be deleted.

- The back-up of video recordings should be secure (eg virtual / cloud storage, off-site server, hard disk drive stored in a fire/flood resistant safe)

- Video recordings must be stored for a minimum of 2.5 years.

- Video recordings must not be tampered with in any way.

- A copy of video recordings must be provided to Roads and Maritime on request and if the RTO ceases trading.

Transmission

- RTO procedures should include the transmission of video recordings, including:
  a) what is the method for transmission e.g. in person, mailing USB, mailing DVD, etc
  b) what is the frequency and what are the normal timeframes for transmission
  c) who is responsible for sending/receiving the transmission; and
  d) what records will be maintained for audit trail e.g. receipts, logs, etc.

- Assessors must dispatch within 2 days from completion of the FCA/CT, a copy of video recordings to RTOs.
• Video recordings must be accessible to Roads and Maritime authorised staff at short notice for announced or unannounced Roads and Maritime on-site audits.

• RTOs must despatch within 2 days of receiving the request, a copy of specified video recordings to Roads and Maritime.

• At any point in time, Roads and Maritime expect RTOs will have readily accessible for audit video recordings for all FCAs/CTs conducted by their assessors from 1 December 2014 until 5 days prior. In other words, Roads and Maritime will assume RTOs are receiving video recordings from their assessors within 5 days from completion of the FCA/CT.

• Video recordings sent to Roads and Maritime must be of windows compatible file format.

6. Recommendations and Considerations

RTOs will not be audited against these requirements. However Roads and Maritime strongly recommends that RTOs and assessors carefully consider the following aspects of in-cabin cameras prior to implementing this specification in order to improve outcomes.

**Video cameras**

• Robust system that will not be adversely affected nor will adversely affect the vehicle’s electrical system
  a) an operating range of 8 – 18 volts
  b) a current draw of no more than 2 amperes in operating mode
  c) a current draw of no more than 0.5 amperes in sleep mode
  d) transient, reverse polarity and high and low voltage protection.

• Need for an adapter - 12V and 24V.

• Black and white (monochrome) video files consume slightly less memory space compared to colour video files.

• Flash memory cards are long lasting compared to SD cards.

• Power lead for every truck as pins wear out quickly.

• Battery pack if accessory plug provision is not available.

• Status indicator (e.g. lamp or LED) for operating mode, fault mode and no power.

• Audible alarm when camera is not fully functional.

• Ensure the camera is powered at all times during operation e.g. If the camera system is powered by an accessory plug, the vehicle will at least need to be turned on to accessory plug position even if the engine is not turned on.

• Ensure the recording unit has sufficient memory space for capturing FCAs/CTs prior to download of the video recordings as per RTO business procedures.

• The recording unit of the camera system must have ‘overwrite’ feature disabled in order to avoid overwriting of existing recordings when the memory is full.

• Indication of available storage space when the camera system is placed in the cabin of the vehicle.

• Rolling display of vehicle speed continuously in the video recording as this could be an issue of contention between assessors and applicants.

• The recording unit of the camera system is placed out of reach of the applicant to avoid accidental disconnection of the camera.

• RTOs and assessors may want to consider the option of getting a formal letter from their camera provider stating that the camera system being purchased meets the requirements set out in this specification.
Compliance

- It is recommended that applicants are made aware of the in-cabin video surveillance requirement upfront and the relevant agreement form is signed prior to commencement of training in order to avoid any disagreement to video surveillance on the day of the FCA/CT.

Data Management

- Storage size and disk space in computer systems to be planned for accommodating the video recordings.
- Adoption of proper folder structure in RTO computer systems for quick and easy retrieval of video recordings.

Transmission

- Use of DVD/USB for transmission of video recordings to RTOs and Roads and Maritime as opposed to electronic transmission via online file upload as this could be time consuming considering the file size.
- Use of registered mail that allows tracking and ensures secure delivery of video recordings.
- RTOs and assessors may want to maintain a log of video recordings sent/received.

7. Evaluation

This specification will be reviewed every two years to determine whether it still meets Roads and Maritime requirements. The review will focus on including additional criteria which may identify RTOs that do not meet the requirements and in evaluating the current requirements to ensure that they are still relevant.

Evaluation may also include a review of a proportionate number of scheme participants who have been removed from any of the above schemes due to sanctions. These may be assessed for common themes leading to their removal and any themes considered for inclusion into the specification.

8. Breaches

- Roads and Maritime will be performing audits on a regular basis in order to monitor compliance by RTOs and assessors with this specification.
- Non-compliance with this specification will be assessed on a case-by-case basis.

9. Definitions

Accreditation – Roads and Maritime licenses each participant for the schemes administered. This licensing is widely termed ‘accreditation’ and refers to the participant’s authority to provide services under the nominated scheme

Accreditation Branch – The branch of Roads and Maritime responsible for administering, and ensuring compliance within, the nominated third party schemes

Applicant – An individual undertaking HVCBA assessment

Assessor – A licensed driving instructor that conducts HVCBA assessments and is attached to a Registered Training Organisation

CT – Competency Test

Customer and Support Services Branch – The branch of Roads and Maritime responsible for providing customer services including enrolment within all third party schemes

FCA – Final Competency Assessment

HVCBA – Heavy Vehicle Competency Based Assessment
HVCORS – Heavy Vehicle Competency Online Reporting System
ICAC – Independent Commission Against Corruption
RTO – Registered Training Organisation
RMS – Roads & Maritime Services

**Scheme Participants** – A person or business accredited by Roads and Maritime to provide a service to the public on Roads and Maritime’s behalf

**Third Party Scheme** – A third party scheme is any service, administered by Roads and Maritime, which is then provided by an accredited individual on Roads and Maritime’s behalf

10. Related Information

**Effective date**: 1 December 2014

**First published**: 2 September 2014
11. Appendices

11.1 In-Cabin Camera Positioning Guidelines

The following camera positions are meant to provide guidelines on how to position the camera that faces the cabin of the vehicle.

<table>
<thead>
<tr>
<th>Camera – Interior View</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Incorrect position – applicant not in full view" /></td>
</tr>
<tr>
<td>Incorrect position – applicant not in full view</td>
</tr>
<tr>
<td><img src="image2" alt="Incorrect position – assessor not in full view" /></td>
</tr>
<tr>
<td>Incorrect position – assessor not in full view</td>
</tr>
<tr>
<td><img src="image3" alt="Incorrect position – camera tilted downward too much; applicant not in full view" /></td>
</tr>
<tr>
<td>Incorrect position – camera tilted downward too much; applicant not in full view</td>
</tr>
<tr>
<td><img src="image4" alt="Incorrect position – camera tilted upward too much and hence roof taking up 25% of the view" /></td>
</tr>
<tr>
<td>Incorrect position – camera tilted upward too much and hence roof taking up 25% of the view</td>
</tr>
<tr>
<td><img src="image5" alt="Incorrect position – dashboard obstructing almost 50% of the view" /></td>
</tr>
<tr>
<td>Incorrect position – dashboard obstructing almost 50% of the view</td>
</tr>
<tr>
<td><img src="image6" alt="Correct position – applicant and assessor in full view; camera angle correct with no obstruction" /></td>
</tr>
<tr>
<td>Correct position – applicant and assessor in full view; camera angle correct with no obstruction</td>
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</tbody>
</table>
The following camera positions provide guidelines on how to position the external view camera.

<table>
<thead>
<tr>
<th>Camera – Exterior View</th>
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</thead>
<tbody>
<tr>
<td><img src="image1" alt="Incorrect position - camera tilted downward and dashboard taking up 20% of the view" /></td>
</tr>
<tr>
<td><img src="image2" alt="Incorrect position – camera positioned facing the left and road not fully visible" /></td>
</tr>
<tr>
<td><img src="image3" alt="Incorrect position – camera tilted upward and road not visible" /></td>
</tr>
<tr>
<td><img src="image4" alt="Incorrect position – cabin interior taking up 50% of view" /></td>
</tr>
<tr>
<td><img src="image5" alt="Incorrect position – suction holder obstructing the view; cabin interior taking up 25% of view and road not fully visible" /></td>
</tr>
<tr>
<td><img src="image6" alt="Correct position (View from a stationary truck within RTO premises) – camera not tilted with direct line of sight to road, as such the road is in full view with no obstructions" /></td>
</tr>
</tbody>
</table>

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