



Forensic Science Regulator

Regulator's Notification: No. 02-2024

Issue

The forensic science activity of estimating vehicle speed from video footage has been subject to review by the Forensic Science Regulator (hereafter referred to as "the Regulator").

This notification is aimed at those who use the results of the estimation of speed from video footage in the criminal justice system so that

- they are aware of potential risks currently associated with the undertaking of estimation of speed from video footage and
- they ensure effective scrutiny in the use of speed estimation from video footage results.

Background

The Regulator's statutory Code of Practice came into force in October 2023, the estimation of vehicle speed from video footage is a forensic science activity (FSA) subject to that Code. The activity is part of 'Specialist video multimedia, recovery, processing and analysis' forensic science activity, FSA - DIG 301. This includes analysis of footage from traffic monitoring cameras and privately owned dash mounted cameras; it does not include the use of Home Office approved speed detection devices which are subject to type approval. This activity is generally conducted as part of collision investigation and requires compliance with the Code, including the requirement to achieve accreditation to ISO/IEC 17025. For speed estimation there are currently no organisations who comply with the requirements in the Code including achieving accreditation.

The Regulator has received a number of referrals on this matter following unsatisfactory results in a Proficiency Test (PT). PT's are a routine measure of quality set to test forensic unit processes, often to test the limits of the unit's capability. Although based on typical real-life casework, the tests may be engineered to have features that specifically test quality checks which means they do not automatically translate into routine performance. The Code of Practice requires forensic units to report unsatisfactory performance in such tests, identify the root cause and set out steps to reduce the risk of reoccurrence.

Actions and Outcomes

As a result of the referrals, the Regulator has taken the following actions:

- i. sought to identify all forensic units undertaking speed estimation, the volume of work, and the current capability and competence of organisations to undertake speed estimation
- ii. ensured all forensic units identified are aware of the requirements set out in the Code, including the requirements:
 - a. to set out in statements how any non-compliance is mitigated so the users of the speed estimation results can properly evaluate the strength of evidence presented; and
 - b. the expected actions for all non-conforming work, including unsatisfactory performance in a PT.
- iii. requested forensic science units who continue to carry out the activity to complete a self-assessment questionnaire on their compliance level against set requirements.

In response to the actions taken by the Regulator, some organisations have paused the undertaking of speed estimation and others have continued to carry out this FSA and provide evidence into the CJS. For those organisations that continue to undertake, or following a suspension, have restarted undertaking this FSA the Regulator continues to work closely with the organisations to understand the risks that inaccurate or unreliable estimation speed will be reported to the CJS.

The Regulator has noted improvements in the way some organisations are addressing their non-compliance – e.g. increase in uptake in training, appropriate software purchase, review of previous work, documentation of methods, etc.

To date, the Regulator has not taken any enforcement action against any organisations in relation of speed estimation from video footage. Although there have been indications of a demonstrable poor performance in PT by some organisations the Regulator has not yet determined whether there are substantial risks in casework for the organisations that continue to undertake, or following a suspension have restarted undertaking the estimation of speed from video footage, and is working with the relevant organisations to assess and understand the risks to criminal investigations and proceedings.

Description of Notification

From the information made available to the Regulator the following represents the areas of highest risk:

- i. **Demonstration of Competence**
 - a. The Code requires that a forensic unit has a competence framework which sets out the specific skills and knowledge its practitioners need to undertake specific forensic science activities as well as how the forensic unit ensures ongoing competence.

- b. Practitioners issuing reports who do not work within a Code compliant competence framework, will need to ensure the required mitigation annex properly reflects which skills and knowledge mitigate the risks in that specific forensic science activity.

ii. Validation

- a. The Code requires all technical methods to be validated in the manner set out in the Code.
- b. The validation status of the method should be clear in statements, including how the risk is mitigated in the case of non-compliance and why the expert is confident the method used was appropriate.

iii. Documentation of method - Selection of Methods

- a. The Code requires that a forensic unit uses methods validated in the manner specified in the Code. In practice, forensic units may have a range of methods and not all will be suitable for every incident. Method selection requires consideration of the range of validated methods against the case in terms of the lighting, the number of frames capturing in incident, pixel density of the frames and relative positioning of the camera to the vehicle of interest.
- b. A practitioner that is declaring non-compliance with the Code, may or may not have documented methods, may or may not have validated them in the manner required and the practitioner needs to justify the appropriateness of the methods in every case.

iv. Documentation of method - Estimation of Uncertainty of Measurement

- a. The Code requires that a forensic unit performing testing is required to evaluate measurement uncertainty.
- b. The estimation of speed from video has multiple components which may contribute to the uncertainty including but not limited to measurements at the incident scene, relative positioning of camera/vehicle/person/object, accuracy/placement of any measuring device (including pixel section), quality of the footage as well as technical camera issues.
- c. The uncertainty is usually given as a calculated figure with a tolerance or range. If this range is too wide, then its utility to address or test propositions may be reduced. Estimates with no range or very narrow ranges imply uncertainty may not have been estimated or applied as generic range. A generic range applied which does not take account of case specific differences in the scene or captured footage might under or overestimate the effect of uncertainty in the measurement.

v. Documentation of method - Checking and Peer Review

- a. The Code requires a forensic unit to have procedures for the performing of checks on critical findings (i.e. findings that that can have a significant impact on the opinion) and peer review. The checking of reports by a second practitioner is a long-standing expectation across all the forensic science activities.
- b. Human errors occur and without effective checks there is a risk that such errors are made and not identified and corrected. Measurement uncertainty deals with systemic imperfections in measurements, not gross, more random, human errors.
- c. Where an absence of procedures for checking and review is part of the reason for non-compliance being declared, practitioners need to address how the risks associated with human errors are managed.

The Regulator has proposed additional details in version 2 of the Code to provide greater clarity in the regulatory requirements for the undertaking of speed estimation from video footage, this includes addressing many of the issue above. These were in the consultation draft of the Code; in the FSA specific requirements section for video processing and analysis:

www.gov.uk/government/consultations/forensic-science-code-of-practice-version-2

In addition, the Regulator has updated the declaration guidance FSR-GUI-0001 to provide more guidance on mitigations when declaring non-compliance to ensure mitigations are declared correctly. The guidance is available from:

www.gov.uk/government/publications/declaring-compliance-with-the-code-of-practice

It is not for the Regulator to decide on the admissibility of evidence, this notification is aimed at raising awareness of the potential risks in the activity of speed estimation from video footage and the Regulator encourages users of speed estimation from video footage results in the criminal justice system to exercise scrutiny in using these results.



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Forensic Science Regulator

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