Home Office

Home Office Type Approval of Road Traffic Law Enforcement Devices

Submission Process Guidance

Version 3.0

October 2024

Any enquiries regarding this publication should be sent to us at:

HOTA-Submissions@homeoffice.gov.uk

Contents

Version History

Version No	Purpose / Change	Date
1	Initial document	Jul 2021
2	Update following the consolidation of technical requirements	Dec 2022
3	Addition of test guidance and minor process changes. Update to terminology from ‘Collision Reduction Equipment (CRE)’ to ‘Road Traffic Law Enforcement Devices (RTLEDs)’	Oct 2024

Introduction

Background

1. Under section 20 of the Road Traffic Offenders Act 1988, in proceedings concerning certain traffic offences[1] records or measurements made by equipment for traffic law enforcement can be admissible as evidence subject to the following conditions: the equipment is a type approved by the Secretary of State and that any conditions subject to which the approval was given are satisfied.

2. To obtain Home Office Type Approval (HOTA), a device must meet specific technical requirements laid down by the Home Office. These requirements are detailed in 'The Speedmeter, Traffic Light and Prohibited Lane Enforcement Camera Handbook v2.0 2022' (**Appendix A)** hereinafter referred to as 'the handbook'.

3. It is the responsibility of suppliers of candidate devices to provide impartial evidence to demonstrate that their product meets HOTA requirements. Where testing is necessary to provide evidence of compliance with the standard, this will be commissioned by Road Traffic Law Enforcement Devices (RTLED) suppliers to test houses; noting that test bodies shall be accredited to ISO/IEC 17025:2017 to ensure their competence, reliability and impartiality.

It is important to note that entry into the HOTA process does not guarantee that a device will be type approved. Entry into the HOTA process will, if sufficient information is provided, lead to a decision on the acceptance or otherwise of a device, along with any conditions that the Home Office applies.

Scope

4. This document is intended for suppliers of RTLEDs, excluding equipment which is used to support law enforcement when assessing levels of alcohol and banned substances in drivers.

[1] The offences are listed in s20(2) Road Traffic Offenders Act 1988

Purpose

5. This document provides guidance on completing the submission form for requesting HOTA of new RTLEDs or modifications to existing type approved RTLEDs. The submission form is designed to help ensure that suitable evidence of meeting technical requirements is provided to the Home Office and their technical partner, the Defence Science and Technology Laboratory (Dstl).

6. This document also provides guidance for the structure and content of supporting documentation (in particular test plans and test reports) which are advised to be used as part of the submission process.

Further information

7. It is not expected that the submission form will be populated directly with the evidence itself; suppliers should instead provide signposts to where the required evidence can be found in their supporting documents, typically in the form of a document title and page number.

8. Where a supplier considers a question within the submission form not to be relevant to their product, they should provide a brief (1-2 sentence) explanation why this is, rather than leave it blank. Unanswered questions will be assumed to lack sufficient evidence to proceed to evaluation and may delay the type approval application.

9. The Home Office seeks advice on the suitability of new or modified devices for HOTA from its technical partner. **As such, it is normal for documents such as test plans and reports to be shared with the technical partner, so that informed advice can be provided.**

Freedom Of Information Act 2000

10. Documents supporting a HOTA application are provided to the Home Office and/or Dstl in confidence, except where clearly stated (e.g. user manuals, see D.16). The documents will be held protectively marked as 'OFFICIAL SENSITIVE – COMMERCIAL' with handling instructions, 'For use by the Home Office, Dstl, stated manufacturer and stated test facility only, unless otherwise agreed.'

11. Suppliers wishing to protect their documents from public release must indicate they are providing information that they consider to be commercially sensitive or provided in confidence, and which documents this applies to. This can be achieved by annotating directly into documents and correspondence, and including a suitable indicator within file names or email subjects (e.g. 'OS-C')

12. Home Office and Dstl are subject to the Freedom of Information Act 2000. Information requests made under this Act are assessed on a case-by-case basis, and not all documents may be withheld. In this event, suppliers may be consulted on the content to redact before release.

The HOTA Process

13. The HOTA process consists of three stages, each supported by specific sections on the submission form. These stages are:

    - Stage 1 – submitting an application to enter the HOTA process
    - Stage 2 – technical details and test plans
    - Stage 3 – submission of evidence for a HOTA decision

14. A flow diagram for the process is provided in Appendix B: Home Office Type Approval Process Flow Diagram.

15. Each request for type approval should have its own submission form and will be allocated a unique reference number by the Home Office. This should be cited in all correspondence relating to the HOTA application, ideally in the Subject header of emails.

16. A single submission form can include multiple modifications. This is considered preferable to submitting multiple submission forms for modifications to the same device. However, since submissions will only be processed once all relevant information is received, suppliers may need to make urgent requests individually. An online copy of the submission form can be found at: Speedmeter, traffic light and lane enforcement camera handbook - GOV.UK (www.gov.uk).

Stage 1 – submitting an application to enter the HOTA process

17. In Stage 1, suppliers apply to *enter the type approval process*, either for a new device or for modification(s) made to an already approved device.

18. Applicants should complete sections A to C of the submission form only. This provides details of device nomenclature and the requirement for consideration for HOTA. Home Office will use the information provided to determine the requirement and priority for type approval.

19. Once completed, the Stage 1 submission form should be submitted to the Home Office at **HOTA-Submissions@homeoffice.gov.uk** as an attachment on an email.

20. If the applicant applies to enter the type approval process but does not provide a completed Stage 1 submission form within 12 months, the application will be cancelled.

21. On receipt of the Stage 1 submission form, the Home Office will assess the initial application, allocate it a unique reference number and determine if it can be accepted. The Home Office will aim to perform this assessment within 10 working days to perform this assessment. If this timescale is going to be exceeded the applicant will be informed.

22. If the Stage 1 application is accepted, the Home Office will invite the supplier to complete and submit Stage 2 of the submission form (also see 46).

23. If the Stage 1 application is not accepted, the Home Office will provide an email reply to the applicant explaining why it cannot progress to Stage 2. The applicant has the option to update the submission form and re-submit this revision to the Home Office.

Stage 2 – technical details and test plans

24. In Stage 2, suppliers provide *technical details* about the device and its method of operation, and present *test plans* describing how they intend to conduct testing that demonstrates compliance with HOTA requirements. The scope of the testing will depend on the type of device and the nature of any modifications.

25. Suppliers should complete sections D to F, in addition to the previously completed A to C (noting that if any details in A to C have changed these should be updated and the change highlighted).

26. Once completed, the Stage 2 submission form should be submitted to the Home Office at **HOTA-Submissions@homeoffice.gov.uk** as an attachment on an email ensuring the unique reference number is stated.

27. Home Office will review the submission form. Incomplete submission forms will be returned to suppliers. Fully completed submission forms and test plans will be sent by the Home Office to Dstl.

28. Dstl will aim to review the test plan(s) and provide initial feedback within 30 working days for modifications and within 40 working days for new devices. If these timescales cannot be met suppliers will be informed of delays.

29. If further information on the Stage 2 submission is required, Dstl will contact the applicant directly, who should in turn provide a direct response to Dstl;

potentially including an updated Stage 2 test plan. The Home Office must be copied in on all emails.

30. If Dstl do not require further information about the Stage 2 submission they will contact the applicant directly and invite them to proceed with the testing activities in accordance with their test plans.

31. **Test plans must be agreed prior to the commencement of testing.**

32. Points of Importance:

a) Devices undergoing testing will be finalised production models. Prototypes or pre-production devices will not be considered for HOTA.

b) Changes made to devices during testing may negate any testing already completed and necessitate further testing.

c) If device changes are made these must be clearly documented, addressed in an updated test plan, and agreed with Dstl at the earliest opportunity.

d) Test bodies shall be accredited to ISO/IEC 17025:2017 to ensure their competence, reliability and impartiality. Accreditation shall cover the testing being reported, or where it does not (for example, in the case of bespoke HO requirements) this should be stated, along with reference to accreditation for a comparable test.

e) Exemptions from testing can be requested and must be supported by full and detailed reasoning (where it is not obvious that testing is not required).

f) Alternative evidence which demonstrates compliance to HOTA requirements can be nominated for consideration on a case-by-case basis.

g) In instances where a part of a HOTA device needs to be replaced and a like-for-like replacement is sought, proportionate testing can be proposed for consideration and must be supported by evidence that the device remains compliant to HOTA.

h) Further guidance information on test plans can be found in Appendix C: Test Plan Guidance.

Stage 3 – submission of evidence for a HOTA decision

33. Once all testing is complete and reports have been received from test bodies applicants should proceed to Stage 3, completing sections G and H of the submission form, to submit their *evidence* for a HOTA decision.

34. This should be submitted to the Home Office at **HOTA-Submissions@homeoffice.gov.uk** as attachments on an email, ensuring the unique reference number is stated.

35. It is required that the updated submission form is completed to provide the specific reference (document title(s) and page number(s)) to the relevant evidence. Submissions with omitted evidence may be rejected.

36. Home Office will then review the Stage 3 submission.

37. If the Stage 3 submission cannot be accepted, Home Office will reply with an explanation as to why not and invite the applicant to take remedial steps and re-submit the form as per above. The Home Office will aim to complete this assessment within 10 working days. If this timescale is going to be exceeded the applicant will be informed. If the applicant considers it relevant to the decision to be made on the Stage 3 submission they can propose new tests and/or update evidence and information. Where there is a belief that a requirement may be open to interpretation, this should be highlighted and further information provided to allow the Home Office to take this into consideration.

38. If the Stage 3 submission can be accepted, Home Office will consult with Dstl and advise the supplier of an expected HOTA completion date. This date reflects the point for when the outcome of the application can be communicated.

39. This HOTA completion date will be based on factors including the Home Office assigned priority and its complexity, the quality of the test report(s) and the presence of relevant evidence. The HOTA completion date may be subject to change at the discretion of Home Office. If this occurs, suppliers will be updated in a timely manner.

40. When the Stage 3 submission has been accepted by the Home Office it will be shared with Dstl for review. The Home Office will aim to share this information within 5 working days. If this timescale is going to be exceeded the applicant will be informed.

41. If Home Office or Dstl require further information about the Stage 3 submission they will directly contact the supplier and invite them to update their application.

42. Following a review of the Stage 3 submission, Dstl will provide advice to the Home Office to inform the decision as to whether the application for Home Office Type Approval can be accepted or rejected.

43. If the Home Office decision is to reject the application the supplier will be provided with feedback.

44. If the Home Office accept the application it will be progressed so that a Type Approval Order can be issued.

45. Further guidance information on test reports can be found in Appendix D: Testing and Test Reporting Guidance.

Completing the submission form

The content of the form is presented below with guidance notes in blue.

When completing the submission form, please indicate which stage of the HOTA process you are providing information for. The form can be added to iteratively at each stage of the process, with the relevant stage selected each time.

Stage	Scope	Sections to complete
1	Application for a new device or modification to be considered for entry into the HOTA process.	A – C
2	Technical information related to how a device/modification functions to inform testing and providing test plans for agreement before testing.	D – F (in addition to A – C)
3	Provision of all supporting evidence including completed test reports.	G & H (in addition to A – F)

Stage 1 - Application for a new device or modification to be considered for entry into the HOTA process.

Part A – Device

	Information required	Guidance notes
A.1	Supplier	Enter the name of the supplier (manufacturer or agent) of the device. If the device is being proposed by an agent, please also provide the name of the manufacturer.
A.2	Full name of product	Enter the exact name and model designation of the product.
A.3	Type of product	Describe in brief (1 or 2 sentences) the type of product.
A.4	New device or modification	State whether this is a new device or a modification to an existing Type Approved device.

A.5	Summary of function or changes	Describe in brief how the device operates. If applicable, describe the changes made to the device since it was last certified.

Part B – Requirement

B.1	Describe the roads policing or road safety requirement for this device or modification, and whether this is speculative or confirmed. If confirmed, please detail the body that has identified the requirement. Include timeframes where relevant and known.
What requirement does the proposed device fill? In what way is it a distinct improvement over existing devices in service? Does the device have a sponsoring body? Are there any contractual obligations (existing contracts or frameworks) and or commitments from prospective customers? This may include any existing contracts or frameworks that are in place for the procurement of device.	
B.2	Describe, with evidence, the risks to roads policing or safety if this device or modification is not type approved, including timeframes.
Taking into account your response to B.1 above, what is the risk if the device is not considered for HOTA? Note that purely commercial risks are not relevant as part of HOTA decisions. Where possible include supporting comments from the sponsoring body.	

Part C – Supplier declaration and Home Office authorisation

I confirm the information is correct to the best of my knowledge, and that I am authorised to make this submission on behalf of the supplier.

Name and position on behalf of supplier	Enter the name of the representative of the applicant organisation and their role / job title.
Date	Enter the date of the signature.

To be completed by HO:

Home Office agree Stage 1 of this form has been completed as required and Stage 2 may be completed and submitted to the Home Office at:

HOTA-Submissions@homeoffice.gov.uk.

Name on behalf of Home Office	The Home Office representative will enter their name.

Date	The Home Office representative will enter the date of their signature.
Unique Reference Number (URN)	Home Office will issue a reference number here to identify and track the request.

46. At this point, Home Office will inform the supplier if the request has been accepted into the HOTA process or not. If accepted, the supplier will be invited to complete and submit Stage 2 of the form, including the URN in all related correspondence. If not accepted, Home Office will provide feedback to enable the supplier to address any issues.

Stage 2 - Technical information related to how a device/modification functions to inform testing and providing test plans for agreement before testing.

Part D – General description and technical overview

Please ensure the following information is provided and identify below where it is documented. For modifications of currently Type Approved devices provide information about the device with differences clearly highlighted and explained (it is acceptable to complete only the fields relevant to the change). Further information on the terminology used below can be found in Section 3 of 'The Speedmeter, Traffic Light and Prohibited Lane Enforcement Camera Handbook v2.0 2022' (Appendix A).

		Document name and page or brief commentary For each question, state where in your documentation the information can be found, or if the information is brief and not already documented it may be entered directly here.
	Information required	**Guidance notes**
D.1	Approval sought: all offences to be enforced and operating modes.	Which types of offence does the device detect? What are its operating modes? Is it a manually-operated, automatic attended or automatic unattended device?

D.2	Details of any function the device may perform, or any information the device may collect, not directly associated with / required for enforcement of the specified traffic offences, if applicable.	Is the device capable of performing any function or collecting any data not related to the enforcement of the specific traffic offences for which type approval is sought? Are you seeking type approval with this functionality activated?
D.3	Confirmation the device is in its final production form with no modifications planned for the near future, or details of any anticipated modifications.	Manufacturers should anticipate obsolescence and accumulate sufficient stock to sell and service devices for some time and preferably, at minimum, the first year following the issue of the HOTA agreement. Is there a strategy for replacement of obsolete components? Is there a contingency of spare parts that are likely to be needed?
D.4	Device function and operating method.	Provide a brief description of how the device operates.
D.5	Encryption system and operation.	Provide details of which encryption system the device uses / how it operates.
D.6	Detail and explain any vehicle classes for which the system does not apply.	Approved devices are expected to work with all vehicle classes operated in the UK – are there any vehicles classes operated in the UK for which the system does not operate? If so, provide details.
D.7	Where the main sensor (e.g. camera, radar) is mounted.	Provide details of where the main sensor is to be located? (e.g. adjacent to the road; on a gantry; in the road surface)
D.8	Road layouts and number of lanes to be covered.	Provide details of the types of road layout and number of lanes covered by the device, indicating limits on road curvature etc.
D.9	State limits of installation parameters such as heights, offsets and angles as appropriate for the device.	Provide the limits of installation parameters, such as maximum and minimum installation heights, distance from road, etc. Ranges or tolerances must be provided for every installation parameter. The limits between which the device is intended to operate will be tested so they must be provided.
D.10	The minimum and maximum speeds at which the device operates.	Provide the speed range over which the device can operate.

D.11	Directions of travel to be monitored.	Provide the directions of travel that are accommodated by the system
D.12	How measurements are made (e.g. for speed, the method used to determine the primary speed).	Provide details of the method used to determine whether an offence is committed. For example, for speed, how the vehicle speed is determined accurately.
D.13	How erroneous measurements are avoided.	Provide details of how possibly erroneous measurements are detected or trapped, and how consistency is checked internally. Include an explanation of how this check is independent of the primary measurement, and how the accuracy of the check is assured. For unattended devices, if speed is measured, the second method of speed measurement should be included.
D.14	How the violating vehicle is accurately and unambiguously identified.	Provide details of how the violating vehicle is singled out from the flow of traffic, and correctly identified.
D.15	The major parts of the device.	Provide a list of the major components of the device.
D.16	User manual and documentation for complete system, including installation, calibration and back office systems. **Note: the user manual should be considered a public document and will not be protectively marked.**	Provide full user, installation and set-up documentation for all aspects of the system. Due to the potential for wider access and release, the user manual should not be considered as provided to Home Office/Dstl in confidence and will not be protectively marked. It should therefore contain no commercially sensitive information. It should however provide sufficient information to enable end users to operate the device effectively. The user manual should have a sample of the record that is intended to be produced by the device for certification by the Section 20 RTOA method. This should be in a prominent position and in a separate section for the purpose.
D.17	A copy of the record from the device that is intended to be certified under section 20 of the Road Traffic Offenders Act 1988.	Provide a copy of a typical record from the device.

D.18	Summary of the safety considerations appropriate to the device and how operators will be made aware of them.	Brief details of all the safety considerations appropriate to the installation and operation of the device. This should include evidence that the duty of care to inform operators of hazards, and actions required of them, will be met.

Part E – Test plans

Please provide the following test plans, identifying the respective test houses and proposed test dates. For any that are not applicable, please state so and give a brief explanation why. Appendix C: Test Plan Guidance provides additional guidance on Test Plans which applicants are encouraged to read.

Scope of testing		**Guidance notes**
E.1	Encryption method.	Provide details of the encryption method used by the device to store and/or transmit data and/or images. The method of encryption must be proved by an appropriate independent authority. Data must be encrypted immediately on capture.
E.2	Ingress protection in accordance with IP55 (testing to IP5X as a category 1 enclosure).	Provide plans for testing to IP55 Category 1. IP56, IP65 and IP66 are also acceptable. The proposed set up of the equipment must be described fully.
E.3	Temperature and environmental effect.	Provide plans for the working and storage temperature tests. The proposed set up of the equipment in the environmental chamber must be described fully. The method of testing equipment functionality at each temperature step must be described fully. If a simulator is used (e.g. a speed simulator) it must be described in full and a complete technical description provided.
E.4	Electromagnetic immunity/compatibility.	The proposed set up of the equipment in the EMC chamber must be described fully. The method of testing equipment functionality at each frequency step must be described fully. If a simulator is used (e.g. a speed simulator) it must be described in full and a complete technical description provided. It is expected that the full functionality of the equipment will be tested at each frequency step.

E.5	Safety (e.g. laser eye safety, photobiological safety of lamps, flash dazzle, radar power, etc).	Formal evaluations of the eye safety of lasers and lamp systems must be conducted. Formal evaluation of flash dazzle must be conducted for driver-facing flash systems. Formal evaluation of the radar power density is required. Test plans are not required for the above tests, but the Home Office must agree to the test house(s) chosen for the tests, so their details should be included here. Formal tests of other safety issues may not be required but the issues, and how they have been addressed, must be described.
E.6	On-road / real-world conditions (e.g. Police user trials).	The device should be tested in real-world on-road conditions. Fixed systems should be installed and tested in two locations. Mobile systems should be tested in diverse locations. Involvement of police forces in this testing is considered to be best practice. Applicable principles are available for reference.
E.7	Off-road / controlled conditions (e.g. track tests).	The device should be tested in controlled off-road conditions. For speed-prosecuting devices, this will involve speed accuracy tests from 20 mph to 120 mph or the maximum speed set by the manufacturer. The full range of installation and operating parameters must be tested. A representative range of legal UK vehicles and number plates must be tested. Difficult traffic and environmental conditions may be replicated. Potential vulnerabilities will be probed. Applicable principles are available for reference.
IMPORTANT – the test plan must be agreed with Home Office prior to testing starting. When constructing a test plan please refer to the points of importance in paragraph 32 and the recommendations in Appendix C: Test Plan Guidance.		

Part F – Supplier declaration and Home Office authorisation

I confirm that:

- The design has been finalised and production models are (or will be) available for the tests;
- The information is correct to the best of my knowledge;
- The information and documentation provided to the Home Office and Dstl (including images) may be used in their reports, for distribution within government; and
- I am authorised to make this submission on behalf of the supplier.

Name and position on behalf of supplier	Enter the name of the representative of the applicant organisation and their role / job title.
Date	Enter the date of the signature.

To be completed by HO:

Home Office agree Stage 2 of this form has been completed as required. This request will be forwarded to Dstl who will aim to provide initial feedback on the test plan(s) within 30 working days for modifications and within 40 working days for new devices. Note, if further information is requested during this process the overall time to provide final feedback may exceed these timeframes.

Name on behalf of Home Office	The Home Office representative will enter their name.
Date	The Home Office representative will enter the date of their signature.

Stage 3 - Provision of all supporting evidence including completed test reports.

Part G – Submission of evidence

Please ensure that, in addition the previous sections, the following information is provided and identify below where it is documented. For any that are not applicable, please state so and give a brief explanation why.

For modifications of currently Type Approved devices provide information about the device with differences clearly highlighted and explained (it is acceptable to complete only the fields relevant to the change).

Appendix D: Testing and Test Reporting provides additional general and specific testing information which applicants are encouraged to read and share with their chosen test house(s).

Technical details		
Information required		**Guidance notes**
G.1	Detailed description of the measurement process with examples and explanations provided for all critical algorithms.	The description must provide a full understanding of how the measurement works.
G.2	Workflow diagram covering the entire process.	This must provide a full understanding of the measurement process and timing.
G.3	Mathematical formulae and algorithms for processes critical to the measurement.	This must provide a full understanding of the critical analytical processes, allowing numerical analyses and simulations to be conducted.
G.4	Sample signals at various points in the processing chain.	This must provide a full understanding of how the raw sensor signal is processed.
G.5	Complete Bill of Materials.	This is to establish that the device is made using good quality components, and to verify that the device is in its approved state in legal proceedings.
G.6	All circuit diagrams, clearly labelled.	This is to enable evaluation of the electrical and electronic characteristics of the device, and to verify that the device is in its authorised state in legal proceedings.

G.7	All PCB layouts, clearly labelled.	This is to enable evaluation of electromagnetic susceptibility testing, and to verify that the device is in its authorised state in legal proceedings.
G.8	Description of the function and operation of each circuit and sub-circuit, including diagrams illustrating key parts.	This must provide a full understanding of how the device works.
G.9	Full, labelled and dimensioned mechanical drawings.	This is to enable evaluation of electromagnetic susceptibility, ingress protection and temperature testing, and to verify that the device is in its authorised state in legal proceedings.
G.10	Photographs of the assembled device from various angles showing all major components with clear labelling to show links to the relevant mechanical drawing.	This is to enable evaluation of electromagnetic susceptibility, ingress protection and temperature testing, and to verify that the device is in its authorised state in legal proceedings.
G.11	Photographs of all internal components (e.g. PCBs) clearly indicating where they sit in the device.	This is to verify that the device is in its authorised state in legal proceedings.
G.12	Details of all programmable devices (including logic devices), with their locations indicated on circuit diagrams, PCB layouts and photographs.	This is to verify that the device is in its authorised state in legal proceedings.
G.13	Details of how the contents of all programmable devices with bespoke software or with software critical to the measurement process are verifiable by the Home Office.	This is to enable the verification of firmware and software on the device before approval, and post approval, to verify that the device is in its authorised state as required by the Home Office. It is normally expected that firmware and software verification will take place using software provided by the chip manufacturer. Any other method will require clear proof of its reliability before it is considered. The use of bespoke software to conduct this verification is strongly discouraged.

G.14	Provide a draft schedule for the HOTA agreement to include all technical details of system boundaries (i.e. what is intended to be covered by the HOTA agreement), configuration, mode of operation, etc. Where appropriate, provide a list of the following for inclusion on the Type Approval agreement: • Version numbers of all software and firmware; • The list of checksums of all software and firmware; • List of all operating systems with their version and build numbers.	The schedule should not contain commercially sensitive information and should be structured as follows: **Product:** name and general description **Components:** List of device constituents and where they are. **Usage:** e.g. attended actively operated, automatic supervised or automatic unattended modes, number of lanes, direction(s) of traffic, limitations on use, other devices or signs with which it is to be used. **Installation Parameters:** heights, offsets, angles, limits on road curvature etc. Ranges or tolerances must be quoted. **Software:** List of software and firmware installed on all programmable components, including version numbers, checksums, where appropriate, and where installed (if long, this may be included as an annex). List the operating systems (including version numbers) installed on all programmable devices. List and include all configuration files, including all fixed values, or ranges of all variable values. Large lists may be included as annexes. If required by the verification procedure(s) proposed in G.13, provide checksums for all microprocessors and software in the system.
G.15	Details of all clocks used, indicating their behaviour with age and changing environmental conditions (including description of how clocks used to check other clocks are of a different sort and respond differently to environmental changes).	Where clocks are critical to measurements, information about how the accuracy might vary as conditions change must be provided. Additional clocks may be used to check the primary clocks. These additional clocks should respond differently to the primary clocks to enable any significant changes in performance to be detected.

G.16	The complete source code for all bespoke and measurement-critical firmware and software.	This is to enable: • Verification of claims made by the manufacturer. • Investigation of potential error states. • Investigation of the implications of later modifications to the code. • Verification the device is in its authorised state in legal proceedings.
G.17	Version numbers and detailed descriptions of any generic software used, including any third party software critical to measurement.	This is to verify that the device is in its authorised state in legal proceedings.
G.18	The spot shape and divergences of any beams used (laser, radar, etc.).	This is to provide understanding of how the measurement works, and how performance might vary with distance and angle.
G.19	How long it takes to make the measurement.	Over what period of time and/or distance is the measurement conducted? How long does it take to process and report the measurement? What is the nominal time of measurement (e.g. end or middle of measurement zone) and how accurately is this determined?
G.20	The wavelengths or frequencies and powers of beams or fields used.	This is to provide understanding of how the measurement works, and to ensure that these parameters are within required limits.

Calibration		
Information required		**Guidance notes**
G.21	Sample calibration certificates.	Provide template, optionally filled with details for a hypothetical or real device. Both the model name and model number should be listed on the calibration certificate.

G.22	The planned frequency of calibration.	Annual calibration is normally expected.
G.23	Details of who will conduct calibration, and what qualifies this organisation to do so.	The manufacturer shall ensure that bodies and persons undertaking calibration are competent to do so and describe how this will be achieved.
G.24	Description of the calibration process.	Provide a full description of the process. A justification and full technical description must also be provided.
G.25	Equipment to be used in the calibration, and how that equipment is itself calibrated and traceable.	This is provided assurance the calibration will be valid. If bespoke equipment is used, technical details must be provided.
G.26	Details, with justification, of any deviations from the calibration guidance.	The calibration procedure is expected to follow the calibration guidance, so any deviations from this should be detailed and reasons explained.

Performance		
Information required		**Guidance notes**
G.27	Evidence the device meets HOTA data security requirements.	This evidence will include the test report pursuant to the test plan in E.1, and may include supplemental data, information or explanations.
G.28	Evidence the device is unaffected by water or dust ingress, in accordance with IP55 (including photographs showing the location and amount of any dust or water entry).	This evidence will include the test report pursuant to the test plan in E.2, and may include supplemental data, information or explanations.
G.29	Evidence the device remains compliant with HOTA performance and accuracy requirements while operating at and between the limits of temperature and environmental conditions.	This evidence will include the test report pursuant to the test plan in E.3, and may include supplemental data, information or explanations.

G.30	Evidence the device remains compliant with HOTA performance and accuracy requirements in the presence of electromagnetic interference.	This evidence will include the test report pursuant to the test plan in E.4, and may include supplemental data, information or explanations.
G.31	Evidence the device is compliant with the safety requirements appropriate to it.	This evidence will include the test report(s) pursuant to the test plan(s) in E.5, and may include supplemental data, information or explanations.
G.32	Evidence the device complies with HOTA performance and accuracy requirements in in real world use.	This evidence will include the test report pursuant to the test plan in E.6, and may include supplemental data, information or explanations. It should demonstrate the device makes accurate, legally enforceable measurements in real world use.
G.33	Evidence the device will produce compliant measurement when used by any operator of typical competence.	This evidence will include the test report(s) pursuant to the test plan(s) in E.6 and/or E.7, and may include supplemental data, information or explanations. It should demonstrate the device will produce the same, correct, measurement when used by any operator of typical competence
G.34	Evidence the device complies with HOTA performance and accuracy requirements across its full operating range, against all vehicle types and in all conditions.	This evidence will include the test report(s) pursuant to the test plan(s) in E.6 and/or E.7, and may include supplemental data, information or explanations. It should provide direct or indirect evidence that all fail-safes and secondary checks built into the system are independent, accurate and effective, and that any fault with the device, or failure to comply with Home Office expectations, defaults to a non-prosecution state.

Part H – Supplier declaration and Home Office authorisation

I confirm that:

- The information is correct to the best of my knowledge.
- The information and documentation provided to the Home Office and Dstl (including images) may be used in their reports, for distribution within government; and
- I am authorised to make this submission on behalf of the supplier.

Name and position on behalf of supplier	Enter the name of the representative of the applicant organisation and their role / job title.
Date	Enter the date of the signature.

To be completed by HO:

Home Office agree Stage 3 of this form has been completed as required.

Due Date	Home Office will provide a date by which they will notify a HOTA decision. This date will be predicated on all requisite information having been provided. Home Office reserve the right to change this date, either due to insufficient information or to changing HOTA priorities. Any such changes will be notified at the earliest opportunity.
Name on behalf of Home Office	The Home Office representative will enter their name.
Date	The Home Office representative will enter the date of their signature.

This request will be forwarded to the Home Office's technical partner, Dstl, to be evaluated. A decision whether to grant HOTA should be forthcoming by the due date below. This may be subject to change due to operational requirements; Home Office will notify any changes as they occur.

Home Office

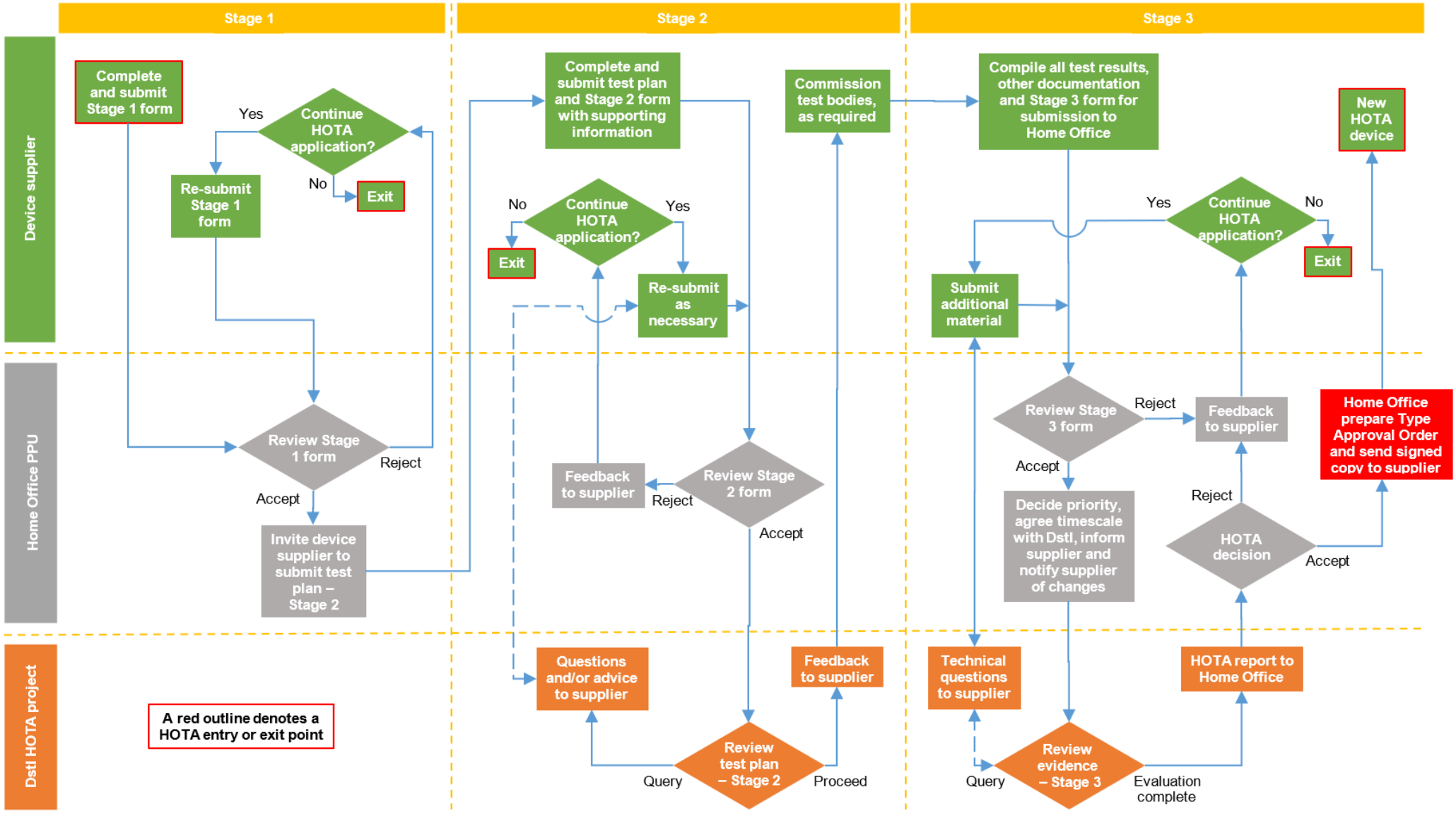
Appendix A: The Speedmeter, Traffic Light and Prohibited Lane Enforcement Camera Handbook v2.0

A guide to type-approval procedures for devices used for road traffic law enforcement in Great Britain

19 December 2022

Copy is available: Speedmeter, traffic light and lane enforcement camera handbook v2.0 2022 - GOV.UK (www.gov.uk)

Appendix B: Home Office Type Approval Process Flow Diagram



Appendix C: Test Plan Guidance

1. Test Plan Guidance

Test plans must be agreed prior to the commencement of testing.

It is recommended that test plans include the following information (guidance notes referenced in brackets):

- Test plan identifier (1.1)
- Commercial and design considerations (1.2)
- Introduction (1.3)
- Test items (1.4)
- Features to be tested (1.5)
- Features not to be tested (1.6)
- Approach (1.7)
- Secondary method of speed testing (1.8)
- Pass/fail criteria (1.9)
- Dependencies (1.10)
- Test environment (1.11)

Test plan guidance notes:

1.1 A test plan identifier should be nominated to enable the specific test plan to be referenced in subsequent test reports.

1.2 Any commercial or other interest in the design, development or sale of the candidate device, or similar devices, should be declared by the test facility. An explanation of how any potential conflicts of interest will be managed should be provided. Refer to sections 4.1.4 and 4.1.5 of BS EN ISO/IEC 17025:2017.

1.3 The introduction should be a short summary of the test plan, stating its scope, goals and objectives. It should also specify any constraints and limitations of the test plan.

1.4 Test items should list the candidate device components that will be tested. It should state their version number, software version, and any other relevant details.

1.5 All the features and functions to be tested should be listed in detail. References should also be made to the appropriate standards documents that contain details of features to be tested.

1.6 All the candidate device features and functions that are out of the scope for testing should be listed, along with reasons why these features will not be tested.

1.7 The approach to testing should detail how testing will be performed. It should provide information about the sources of test data, inputs and outputs and testing techniques.

1.8 For devices with a speed function, the secondary method of speed measurement should be tested, including, where appropriate, immunity testing, which may itself include timing accuracy and the integrity of any captured images.

1.9 Pass/fail criteria should be stated for the candidate device for a given type of testing (for example, electromagnetic compatibility, ingress protection, etc.). Pass/fail criteria should be given for each stage of the test regime. An overall test programme pass/fail criterion should also be given. If any individual test is failed, then the device shall be considered to have failed testing.

1.10 The test method should describe dependencies between tasks and list details such as test scenarios, test cases and test scripts.

1.11 The test method should state requirements for the test environment, including listing the hardware, software and any other requirements of the test environment.

Appendix D: Testing and Test Reporting Guidance

1. General Testing Guidance

1.1 **Test plans must be agreed prior to the commencement of testing.**

1.2 Test houses should include a covering letter with the points referred to in section 3 of this Appendix.

1.3 Any deviation from normal and correct operation of the device should be reported.

1.4 Device setup should be in accordance with the documented procedure provided.

1.5 Where potential vulnerabilities have been identified by the test house during testing, or where the test house suspects that there are vulnerabilities that are not adequately explored and eliminated by the test plan, their nature and the conditions under which they might become operational issues should be documented in the report and test report covering letter. The test house may investigate these vulnerabilities further, but the Home Office may nevertheless require additional tests.

1.6 Candidate devices should be tested in the operational configuration. Any deviation from operational configuration should be described in full.

2. Test Report Guidance

2.1 The report title should include the name of the device under consideration.

2.2 Test reports should list all serial numbers, hardware, software and firmware version numbers, operating systems and checksums displayed by the candidate device.

2.3 All test results and data should be reported whether or not the candidate device is considered to have passed or failed the test.

2.4 Test houses should ensure that test methods used for each component of the overall test programme are reported in full.

2.5 Any deviation from an agreed test plan should be fully documented in the test report, along with justification. This should include testing that is additional to the agreed test plan. Any deviations shall be considered at the Home Office's discretion.

2.6 Pass/fail criteria should be clearly stated, along with each relevant testing standard.

2.7 All equipment setup parameters, including installation geometry (for example, heights of apparatus above the ground and relative positions), should be presented clearly. An explanation and justification for any deviations from the agreed test plan should also be presented.

2.8 Test reports should provide complete details of test parameters used. This includes, for example, details of frequency steps used, alongside any observations made at each step.

2.9 Annotated diagrams or photographs of the test setup should be provided.

2.10 Any modifications made to the candidate device should be reported and explained, with accompanying photographs or diagrams.

2.11 Test reports should be presented clearly, any wording should be accurate and concise.

2.12 Test reports should include a standalone summary section, distinct from the covering letter, identifying the candidate device, the tests conducted, and indicating pass/fail results. Conclusions, summaries and observations should be clearly identifiable, for example, by positioning them near the top of the test report.

2.13 Records must be kept and supplied to the Home Office of all changes made to the test report at the equipment supplier's request.

3. Covering Letter

It is recommended that a covering letter is provided with test report(s) which provides a summary of the test report(s) that contains the following information:

3.1 Did the device pass or fail[2] testing against Home Office requirements, including a reference to the document / test report where this information can be found.

3.2 If unable to provide a pass or fail assessment, an indication as to why not.

3.3 A list of the main observations, notes, and remarks made and effects noted in the report. Observations, notes, or remarks may relate to failures, or to anomalous or unexpected behaviour or artefacts or effects short of failure. These may be random, or in response to particular testing conditions.

3.4 A list of any potential vulnerabilities that have not been adequately investigated in the tests and, where applicable, recommendations for how these can be investigated.

[2] Failure is the display of an incorrect reading outside the tolerance range of error, or if the device displays a reading when no measurement should be possible. The display of a blank screen or defined symbol in recognition of an incorrect reading is acceptable. Additionally, a device may be deemed to fail if it is does not meet all the relevant requirements described in Home Office handbook.

3.5 A list of all modifications made to the equipment for the tests.

3.6 A statement as to whether the test plan agreed between the supplier and Home Office was/was not followed.

3.6.1 When it is referenced, the version number and date of the test plan as well as any other identifying features should be provided alongside, if known, the date the test plan was agreed.

3.6.2 If the test plan was not followed, a list of any deviations from the agreed test plan, including an explanation/justification as to why the deviation was required.

3.7 A statement as to whether or not any conflicts of interest, or other issues of impartiality, have arisen prior, during, or following testing, together with how these have been eliminated.

3.8 A list of all changes made to the test report at the equipment supplier's request.

Specific Testing Guidance

It is expected that the following testing requirements are adhered to. Any deviation from these testing requirements should be highlighted for agreement at the test plan stage with justification.

4. Functional Testing

4.1 Testing should be conducted on moving vehicles on test tracks or public roads. However, methods employing simulators may be used to exercise systems at vehicle speeds higher than can be attained on test tracks, where necessary.

5. Device Pass/fail Criteria

5.1 Production of an erroneous offence record or any offence record or speed measurement when there should be none shall be considered as failure.

5.2 Speed measurement outside ±1 mph for simulated speed shall be regarded as failure. Details of speed measurement accuracy requirements for HOTA can be found in Appendix A.

5.3 Indication of a red for a green or an amber traffic light shall be considered as failure.

6. Electromagnetic compatibility (EMC) testing

6.1 Dwell time at each frequency step to permit the observations of effects upon candidate device shall be stated in the test report.

6.2 Test reports should describe exactly how the candidate device is exercised at each frequency step.

6.3 A description of how test houses ensure that candidate device has settled at each test step should be provided.

6.4 Where speed simulators are used:

6.4.1 A full technical description of the simulator must be provided, together with a detailed account of how it is set up for these tests, and of how accuracy and reliability have been determined. The accuracy of the speed simulator must be at least ±1 mph

6.4.2 If the response of the device to a simulated speed during the tests is not within ±1 mph, it shall be deemed to have failed.

6.5 If the effects of interference are observed, then the test body shall reduce the output of the EM source until the threshold of any EMC induced effects can be established, including complete shutdown or failure to operate. This threshold level shall be included in the test report.

6.6 Production of an erroneous offence record, a false positive, shall be deemed to be a failure of the device under that test.

6.7 For each frequency step:

6.7.1 The candidate device shall be fully exercised using real or simulated sensor inputs.

6.7.2 The largest RF field strength at which the candidate device produces correct measurements must be reported, even if there are interfering effects or non-critical functions are affected in some way by the interference.

6.7.3 If any interference effects are observed in the candidate device the nature and the RF amplitude thresholds of all effects must be determined and reported.

7. Ingress protection (IP) testing and environmental testing

Environmental testing covers equipment as-installed, or under recommended storage conditions.

7.1 For IP5X (dust) ingress tests, devices should normally be tested as Category One enclosures.

7.2 Any ingress of water or dust observed must be reported. Photographs or a clear diagram shall be used to show where and how water or dust entered the candidate device.

7.3 If water ingress occurred, the presence or otherwise of a suitable drainage path must be reported.

7.4 The risk of water ingress accumulating and making contact with electrically active or sensitive components must be reported. Pay attention to the risk of movement of the device displacing water or dust ingress from benign to less benign locations.

7.5 For IPX5 (water) ingress tests, the precise point on the candidate device and the angles the water jets were incident must be reported. These can be shown by photographs or clear diagrams. All faces of the candidate device must be sprayed, and water jets must be applied at multiple incident angles.

END OF DOCUMENT