FRENCH REPUBLIC

_____

Ministry of the Interior

_____

Order of on the official approval of automated inspection systems for traffic restrictions in low-emission mobility zones

NOR:

Groups concerned: *Manufacturers of roadside inspection equipment, local and regional authorities and accredited body designated for type examination and official approval.*

Subject: *Since the entry into force of Act No. 2019-1428 of 24 December 2019 on mobility orientation, Article L. 2213-4-2 of the General Code of Local and Regional Authorities (CGCT) provides for the possibility of implementing 'fixed or mobile automated data monitoring devices for vehicle signs' to observe, pursuant to Article L. 2213-4-1 of the CGCT, infractions of the traffic rules in low-emission mobility zones (ZFE-m). This Order defines technical characteristics which must be complied with by the inspection equipment in the context of official approval so that the findings of infractions of traffic rules in the ZFE-m made by the latter are authentic until proven otherwise.*

Entry into force**:** *The text shall enter into force on the day after its publication.*

Application: *This Order is issued pursuant to Articles L. 130-9 of the Highway Traffic Code and R.*111-1, R*119-4, R*119-5 and R*119-8 of the Highway Regulations Code (CVR).*

The Minister of State for the Interior,

Having regard to Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules
on information society services, together with notification No. sent to the European Commission on 2025;

Having regard to Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications;

Having regard to the Local and Regional Authority Code, in particular Articles L. 2213-4-1 and L. 2213-4-2;

Having regard to the Highway Regulations Code, and in particular Articles L. 111-1, R.*119-4, R.*119-5 and R.*119-8;

Having regard to the Highways Traffic Code, in particular Articles L.130-9, L. 318-1 and R. 318-2;

Having regard to Decree No. 2010-112 of 2 February 2010 for the application of Articles 9, 10 and 12 of Ordinance No. 2005-1516 of 8 December 2005 on electronic exchanges between users and administrative authorities, as amended;

Having regard to Decree No. 2010-750 of 2 July 2010 on the protection of workers against the risks arising from artificial optical radiation;

Having regard to Decree 2015-1084 of 27 August 2015, as amended, on the electromagnetic compatibility of electrical and electronic equipment;

Having regard to the Order of 14 February 2003 issued for implementation of Decree No. 2002-1251 of 10 October 2002 on road equipment and amending the Highway Regulations Code,

Hereby orders:

Article 1

This Order applies to automated inspection systems set up in low-emission mobility zones, as defined in Article 3 of the specifications annexed to this Order.

Article 2

If they are intended for use on the public highway as defined in Article L. 111-1 of the Highway Regulations Code (CVR), the inspection systems must undergo an official approval procedure to check compliance of the hardware with the technical specifications and procedures set out in the specifications document attached to this order.

Article 3

This Order shall be recorded in the *Official Journal* of the French Republic.

Signed on

For and on behalf of the Minister:

The Road Safety Officer

Annex

SPECIFICATIONS FOR OFFICIAL APPROVAL OF AUTOMATED INSPECTION SYSTEMS IN LOW-EMISSION MOBILITY ZONES

Chapter I

Automated inspection system in low-emission-mobility zones (SCZFE)

Article 1 Objectives of the inspection system in low-emission mobility zones

Automated inspection of traffic rules in low-emission mobility zones (ZFE-m) established pursuant to Article L.2213-4-1 of the General Code of Local Authorities consists in establishing the material elements of the infraction via approved equipment that scrutinises vehicle flows and compares their classification under Article R.318-2 of the Highway Code and their registration with the rules of the ZFE-m and the derogation lists. Where appropriate, such equipment shall transmit an infraction message to a processing chain that allows the validation of the infraction and the issuing of a notice of contravention.

Chapter II

General description of the official approval process

Article 2 General conditions for official approval

Pursuant to the provisions of Article R.*119-5(II)(b) and Article R.*119-8 of the Highway Regulations Code, which provide for the obligation to use equipment the conformity of which has been attested with the regulatory technical specifications, the official approval conditions specific to the inspection of traffic restrictions in low-mobility zones are defined in these specifications.

Article 3 Scope

The official approval shall cover:

- field-installed inspection equipment, consisting of automated vehicle registration plate recognition devices for vehicle detection, reading of vehicle data, and additional hardware and software devices that ensure the coordination of these functionalities, such as the device described in Article 18;
- the software part of the technical management system, responsible for:
    - the sending of external databases and lists of derogations from inspection equipment;
    - the entry, validation by the operator and transmission of the modifiable parameters that influence the finding of the material elements of the infraction, from the Human-Machine Interface to the inspection equipment.

Article 4 Official approval procedure

The official approval procedure is part of the regulatory framework defined by the Order of 14 February 2003 implementing Decree No. 2002-1251 of 10 October 2002 on road equipment and amending the Highway Code.

It consists of the following successive phases:

1. Appraisal of the official approval application file;
2. Type examination comprising:
   - Examination of device conformity;
   - Verification of the completeness of the documentation detailed in Annex 2;
   - Tests;
   - Issuance of the type examination certificate;
3. Initial verification: conformity of the manufactured or repaired equipment with the type examination certificate and conformity of the device with the provisions of Article 11;
4. Installation verification;
5. Periodic verification.

Manufacturers shall apply for official approval by filing a dossier containing the general information relating to them and to their production and inspection capacities, on the template of the form in Annex 1.

Type examination tests shall be carried out by the body designated for the type examination, partly on site reproducing the actual roadside conditions and partly in a laboratory as detailed in Article 8.

The equipment holding a type examination certificate shall be subject to the verifications described with their terms and conditions in Articles 13, 14 and 15, to be carried out by an organisation approved in accordance with the provisions of Article 16. Each of these verifications is sanctioned by the issuance of a certificate and gives rise to the information in the logbook provided by the manufacturer or accompanying the automated inspection system for low-emission-mobility zones (SCZFE).

The logbook is based on automatically tamper-proof items produced by the equipment (images, traces, statistics, technical measures) which can be checked a posteriori.

The procedures, the verification reports and the digital logbook shall form part of the technical file, the format of which is set out in Annex 2.

Where appropriate, assessments may be carried out by the body designated for the official approval of the SCZFE on the implementation of the procedures relating to the initial installation verification and periodic verifications.

The various stages relating to the official approval procedure are detailed in Articles 5 to 17 below.

Article 5 Appraisal of the official approval application file

The application for official approval shall be sent by the manufacturer or importer to the Road Safety Officer or, on their behalf, to their delegate.

For a foreign manufacturer not established in the European Union, the application for official approval shall be accepted only if the manufacturer can demonstrate that they have a representative

established in a Member State of the European Union. In such cases, an application for official approval may be made by this representative.

The file, drafted in French, must include:

- an application for official approval;
- a technical file on the manufacturer, the content of which is specified in Annex 1 of these specifications;
- a technical file on the manufacturer, the content of which is specified in Annex 2 of these specifications;
- for a foreign manufacturer not established in the European Union, evidence that they have a representative established in a Member State of the European Union.

The Road Safety Officer or their delegate may request any additional information necessary for the assessment of the application when this is necessary for understanding the operation of the device.

The conformity of the technical file is inspected in accordance with the provisions of Annex 2.

Article 6 Type examination - Issuance of the official approval

Type examination is the validation of the design of the system described in Article 3 in accordance with the requirements laid down in this Order by Articles 18 to 34.

The type examination shall include the following:

- a technical-administrative examination in accordance with Article 7,
- type tests carried out on a representative sample of the system submitted for official approval in accordance with Article 8.

The type examination shall be attested by a certificate issued by the Minister responsible for road safety on the basis of the results complying with the specifications of these official approval specifications. The type examination certificate shall specify, where appropriate, the special conditions for the use of the automated inspection system.

Any modification of an officially approved system or its installation conditions that are liable to significantly affect its characteristics or functionalities shall be subject to a new type examination.

If the modification does not affect the characteristics or functionalities of the officially approved product, the Minister charged with road safety shall issue a new official certificate for the template drawn up in accordance with the documents submitted with the application.

Article 7 Technical-administrative examination

The technical-administrative examination shall include a verification of the functionalities of the equipment with regard to the characteristics described in the technical documentation defining the equipment and the requirements of these official approval specifications. It may include the analysis of the programmes used by the electronic devices.

Functional tests must be carried out in accordance with Articles 18 to 23 of these specifications.

Article 8 Initial type tests

All approval tests shall be carried out on the supplied sample(s) which shall be representative of the type to be officially approved for the inspection equipment part.

The technical management system used in the verifications shall be identified and correspond to the system or part of the system planned in actual production with the software components planned and identified within the scope of the official approval.

The principle of the tests is to observe a given number of passages by different types of vehicles during different states of day and night, and in different road occupation conditions, with the inspection equipment operational. The tests shall be carried out in accordance with the test protocol proposed by the manufacturer and validated by the Minister responsible for road safety.

The order in which the tests are carried out is not prescribed.

The purpose of the initial type tests shall be to verify the compliance of the system with the requirements of Articles 18 to 34.

Tests carried out in the real site make it possible to have the typical conditions encountered for the use of the technical management system, in particular with regard to the volumetry and the class of vehicles. These are tests of the actual operation of equipment to ensure that the operation of the device complies with the requirements of Articles 24 and 25. These tests shall be supplemented by the recoverable video stream detections necessary to assess its compliance with Article 27. They can be supplemented by simulation tests or on closed road (track).

Laboratory tests shall also be carried out to assess the proper functioning of the equipment for the extent of the rated operating conditions as well as under the effect of disturbances. These are:

- tests of the device fitted with its software part to ensure that its operation complies with the requirements of Articles 18 to 23, 26, 28 to 34;
- tests of an equipment to ensure that its operation complies with the provisions of Article 19;
- the assessment on the recovery of the video stream mentioned above, of the compliance of the equipment with the requirements of Article 27.

Article 9 Rules applicable to applicants from the European Union and the European Economic Area

Manufacturers or importers established in the European Union, the European Economic Area, the United Kingdom, Switzerland or Turkey may either:

1) Apply for the type examination certificate referred to in article 6 from the Road Safety Officer;

2) Ask to benefit from the so-called mutual recognition rules and procedures pursuant to the above-mentioned Directive 2005/36/EC and Article R.*119-5(III) of the Highway Regulations Code by providing the Road Safety Officer with a file consisting of the following documents:

- the identification details of the company and the manufacturing units;
- the characteristics of the product(s) with detailed drawings and the applied standards or technical specifications;
- a precise description of the tests carried out in the laboratory and/or on site and the test methods;
- results of the tests carried out;

- status of the manufacturing inspections carried out;
- identification of the certifying body, the testing laboratory, the inspection body, if any, and their certificate of official approval;
- type or conformity examination certificate obtained for the equipment submitted;
- any other information that may be used to establish the equivalence of their equipment that the plaintiff deems useful for appraisal of the file.

On the basis of this file and, if necessary, of limited additional tests required due to inaccurate or incomplete test results, the Road Safety Officer may determine whether the equipment submitted offers a recognised level of safety and fitness for purpose equivalent to that specified in these specifications and then issue the certificate of equivalence of official approval.

If the equivalence referred to above cannot be established by this procedure, the applicant may choose the procedure set out in (1) above for submitting an application for official approval.

The attestation of equivalence shall be renewable every five years on the basis of satisfactory results in the inspections defined in (3) below.

On behalf of the Road Safety Officer, the Automated Inspection Department of the Road Safety Office is responsible for examining mutual recognition files and issuing the attestation of equivalence.

3) Products which have obtained a certificate of equivalence shall be subject to verifications of manufacturing inspection and possibly to periodic non-systematic conformity inspections which may be carried out in France or in the country of establishment of the holder by bodies or laboratories approved in that country offering guarantees equivalent to those of French bodies.

Article 10 Validity of the type examination certificate

Type examination certificates shall be valid for five years and may be extended by periods of up to five years.

Where the validity of the type examination certificate is not extended or where the attestation of equivalence referred to in Article 9 is not renewed, equipment in service conforming to that type shall continue to be able to be used and repaired but the entry into service of new equipment may no longer be carried out.

Article 11 Official approval marking

All inspection equipment manufactured in accordance with the officially approved type shall be identified by an externally visible inscription of at least the following information:
- brand;
- type;
- unique serial or manufacturing number of the ZFE-m inspection equipment;
- year of manufacture;
- number of the type examination certificate.

The equipment must include an internal display enabling this information to be listed, as well as the version and digital fingerprint of the on-board software calculated directly.

The software part of the technical management system within the scope of the official approval must be identified and easily accessible on the user interface.

This official approval identification must indicate at least:

- name of the software;
- version number and its date of publication;
- type examination certificate number;
- a digital fingerprint of the software within the scope of official approval.

Article 12 Quality assurance system approval methods

Any manufacturer or repairer may have their quality assurance system approved in accordance with the following provisions. Any manufacturer or repairer can obtain the certification of its quality management system by an accredited certifying body (OCA) of its choice to attest to the conformity of its quality system with the ISO 9001 standard (latest version in force).

The reference system applicable to the quality assurance systems (QAS) of a manufacturer or repairer for its approval under these specifications is the NF EN ISO 9001:2015 standard (+ amendment 2024) or a management system standard of equivalent quality.

The approved manufacturer or repairer shall keep at the disposal of the Ministry in charge of road safety the documents relating to the qualifications of the subcontractor and the work carried out by them under this Order.

Article 13 Initial verification

Initial verification of equipment is the unit inspection operation whereby a body that complies with the provisions of Article 16 certifies that new or repaired equipment complies with the requirements of its type examination certificate and with the following requirements described in these specifications, to be verified on:

- equipment installed in situ under Articles 24, 25, 26, 27 and 30 thereof;
- equipment installed in situ or not in accordance with Articles 23, 28, 31, 32 and 34 thereof.

Verification of the accuracy rate defined in Article 27 shall be carried out on a chronologically ordered series of 500 vehicles whose plate has been read by the equipment, verifying that no automated vehicle registration plate reading is false.

Initial verification serves as periodic verification. It shall also apply to any new equipment before it is put into service to supplement the existing approved device; to any equipment taken out of repair as a result of deterioration which has affected its proper functioning before it is put back into service.

Article 14 Installation verification

Installation verification of installed equipment is the unit verification operation, consisting in the certification by an organisation complying with the provisions of Article 16 that the equipment complies with the technical provisions applicable to it and that its installation conditions ensure its correct use and meet the regulatory requirements and its type examination certificate.

Article 15 Periodic verification

The periodic verification of equipment put into service is the unit inspection operation consisting in having a body that complies with the provisions of Article 16 attest the correct operation of the equipment, its good performance over time, its compliance with the requirements described in this specification and those of its type examination certificate, and in proving that the deviations of its characteristics remain below the defined thresholds.

The points to be verified periodically are:

- on equipment installed in situ in Articles 24, 25, 26, 27 and 30 thereof;
- on equipment installed in situ or not in its Articles 23, 28, 31, 32 and 34;

and those defined in the type examination certificate of the equipment concerned.

Verification of the accuracy rate defined in Article 27 shall be carried out on a chronologically ordered series of 500 vehicles whose plate has been read by the equipment, verifying that no automated vehicle registration plate reading is false.

Periodic verification shall be carried out at least once every year of operation.

Article 16 Accredited bodies for initial, installation and periodic verifications

The bodies carrying out the procedures provided for in Articles 13, 14 and 15 of this Order shall be approved by the Minister responsible for road safety.

A body may not be authorised to perform initial verifications, installation verifications or in-service operational inspections for instruments that it designs, manufactures, imports, supplies, installs or repairs.

The body shall keep at the disposal of the Ministry in charge of road safety the documents relating to the qualifications of its subcontractors and the work carried out by them under this Order.

For the purpose of its accreditation, the body must draw up a quality assurance manual demonstrating compliance of its quality system with:

- the regulatory requirements;
- the requirements of the appropriate quality assurance standard.

If the use of verification procedures or material or human resources that differ from one region to the next is envisaged, the file submitted must describe all possible scenarios.

Article 17 Payment of costs

The cost of the type examination shall be borne by the manufacturer.

Chapter III

General technical specifications

Article 18 Architecture and general operation of the inspection equipment

The inspection equipment shall include all components enabling the detection of vehicles, the automatic reading of the vehicle registration plate, the comparison with on-board lists and parameters, the determination of the status of the offence, the acquisition, storage, processing of evidence of the passage into the inspection area of the infringing vehicle (in particular the associated image capture device(s)).

The reading of the vehicle registration plate by the inspection equipment for the identification of the detected vehicle makes it possible to establish whether the vehicle is in breach, after comparing the classification of the vehicle within the meaning of Article R. 318-2 of the Highway Traffic Code with the rules of the low-emission mobility zone, and the verification of the lists of derogations.

In particular, the architecture and software protection elements of the inspection equipment prevent software that is not part of the scope of official approval from changing the behaviour of the software that is the subject of the official approval.

Article 19 Integrity and protection of equipment

Any link or communication interfaces shall be secured in such a way as to prevent manipulation of data and software other than by the intended functions. In the event of a change detected (loss of integrity), the inspection equipment must become inoperative and send an alert to the technical management system.

The proper functioning of the inspection equipment must be ensured for certain rated operating conditions as well as under the effect of disturbances. The general technical specifications concerning inspection equipment as defined in Article 3 shallcomply with the following provisions:

- the inspection equipment must have a door with a secure opening (badge, physical code or electronic opening via remote inspection, etc.); it must be possible to invalidate the secure opening means in the event of loss or theft;
- the inspection equipmentmust be protected against any accidental or intentional corruption which would lead to the operation of the device not meeting the requirements of this Order;
- protection index: the envelope protecting the logic units and/or the image capture equipment must have an ingress protection grading of IP 45;
- shock and vibration resistance: inspection equipment must retain nominal performance levels following mechanical resistance tests; the severity class of the tests shall be as applicable to instruments subjected to extreme shocks or vibrations;
- electromagnetic compatibility: the inspection equipment must comply with the aforementioned Decree No. 2015-1084;
- risks due to artificial optical radiation: the lighting of the inspection equipment must comply with the aforementioned Decree No. 2010-750;

- the CE marking affixed to the equipment represents the compliance of all its components with the regulations in force;
- temperature and humidity management: the inspection equipment shall operate in and withstand ambient temperature conditions between -25 °C and 55 °C and humidity conditions between 10 and 90%.

Article 20 Device configuration parameters

The parameters of the inspection equipment shall be transmitted in a traceable and tamper-proof manner from the technical management system to each equipment.

The technical management system must keep a tamper-proof record of the information sent to the inspection equipment. These records must be kept for a period of at least two years and must be retrievable from the Human-Machine Interface.

Article 21 Software integrity and compliance

The inspection equipment shall include an inspection enabling the integrity of each of the software within the scope of the official approval to be verified locally and remotely by its digital fingerprint.

Article 22 Numericalseparation of parameters and integrity of derogation lists

The technical management system must have a function for digital sealing of the configuration parameters of the inspection equipment (legal parameters, inspection quotas, databases, etc.) which are defined daily in advance. Changes to the parameters transmitted by the technical management system to the inspection equipment shall enter into force at the earliest the following day, without prejudice to the deactivation or reactivation of the inspection equipment.

The technical management system shall ensure the integrity of the exemption lists from start to finish.

Article 23 Video interface between image capture and processing

At the output of the inspection equipment's internal image capture device, an exchange interface between the inspection equipment and the technical management system shall enable:

- recovery of the intermediate stream of the image captures;
- injection of an intermediate stream for testing the rest of the inspection equipment out of operation, or on the manufacturer's site, or on a third-party test equipment, in particular for diagnostic mode or for official approval tests, as well as for installation and periodic tests.

This intermediate stream takes the form of a video/series of images, in a standard format that can be viewed and used by standard software.

When the intermediate stream is injected for testing, it is irreversibly marked with a 'TEST' watermark, or any other equivalent device.

Chapter IV

Special technical specifications relating to traffic detection within the inspection equipment

Article 24 Operating conditions

The special technical specifications described are applicable to:
- any time of the day;
- during normal or normal deteriorated weather conditions (meteorological disturbances of any kind which, by their nature, duration and intensity, can be regarded as customary for the site under consideration, i.e. which are attested to be encountered several times each year).

They apply to the following vehicles:
- light vehicles (motor vehicles, utility vehicles, with trailers etc.);
- heavy vehicles (HGVs, coaches, buses, etc.);
- two or three motorised wheels.

Article 25 Vehicle image capture and detection

The detection of traffic by the inspection equipment shall consist, when a vehicle is present in the field of vision of the image capture device, of the image capture of the vehicle and its vehicle registration plate. This presence in the field of vision characterises the presence of the vehicle in the ZFE-m.

The same detection shall be considered to be that based on images of the same vehicle captured by the same equipment separated by less than one hour.

The inspection equipment shall be configured and physically installed to detect and monitor vehicles in a predetermined field of vision corresponding to the ZFE-m (selected traffic lanes). This field of vision must be able to have a stencil-masking section allowing it to be limited to the traffic lanes, parametrised with the technical management system. Stencil-masking is an integral part of the inspection equipment configuration and is associated with the defined field of vision.

This field of vision must comply with the in-service condition limits defined by the manufacturer and specified in the type examination certificate over time, even in the event of possible movements of either the image capture equipment or the physical medium. The inspection equipment shall include an orientation and image capture verification device that ensures that the field of vision is respected over time. It shall issue an alert to the technical management system in the event of deviations from defined thresholds, and shall, if the limit thresholds are exceeded, initiate failure and shutdown.

The image capture system may consist of one or more optical and electronic systems, to cover the field of vision. These can also be oriented to cover two directions of traffic.

The image capture system must operate within an installation adjustment range, which must be defined in the operating and installation manual. This adjustment range defines in particular the longitudinal and lateral positions of the image capture equipment as well as its possible height, azimuth and inclination, and any other setting that has an influence on the image capture and compliance with this specification.

The detection shall be proven and may be inspected with two images, having regard to the requirements of Article 32.

Article 26 Prohibition of false detections

No vehicle shall be detected if it does not comply with the conditions set out in Article 25.

Article 27 Registration plate reading performance

The inspection equipment shall read the vehicle registration plate of any vehicle detected within the meaning of Article 25. This reading is carried out via automatic processing of the image capture(s).

The registration number consists of the characters (letters, digits, separators) according to the current codification. Its reading takes into account the entire chain of which it is composed, with the exception of any logos or graphic elements present on the plate.

It shall not take into account the character or characters identifying the country, if present.

An automated vehicle registration plate reading is incorrect if it is different from the one obtained in an unambiguous manner from images of the image capture device by several independent human operators.

The inspection equipment shall discard registration plates with uncertain reading.

This phase is called Automated License Plate Reading (ALPR).

The expected functioning of the automated reading of the vehicle registration plate is assessed through the concepts of recall and accuracy. These performance criteria shall be defined in the case of vehicles detected by the equipment.

Recall

The recall represents the number of vehicle registration plates correctly read by the equipment according to the expected performance of a human operator (True Positive - TP) compared to the number of vehicle registration plates it should have read (taking into account unread plates, True Negative - TN).

The recall rate must be greater than or equal to 30%. This percentage shall apply to any chronologically ordered and consecutive series of at least 200 vehicles passing within the field of vision of the image capture system and whose vehicle registration plate is legible according to the expected performance of a human operator.

$$recall(\%) = 100\,\frac{TP}{TP+TN}$$

Accuracy

Accuracy is a ratio that expresses the number of plates correctly read (True Positive - TP) by the equipment in relation to the total number of plates read (taking into account poorly read plates, False Positive - FP).

The accuracy rate shall be equal to 100%. This percentage shall apply to any chronologically ordered series of at least 10,000 vehicles whose plates have been read by the equipment. This series may be broken down into independent, chronologically ordered sub-series and together totalling at least 10,000 vehicles whose plate has been read by the equipment.

$$accuracy(\%) = 100\,\frac{TP}{TP+TN}$$

Chapter V

Special technical specifications relating to processing

Article 28 Inspection and characterisation of an infraction from its registration

The characterisation of the infraction is carried out by checking the status of the vehicle on its right to travel in the ZFE-m, against the parameters defined and transmitted for each item of inspection equipment, in particular the search for the plate in the Crit'Air database and its permitted or non-permitted level at the relevant time, or the existence of a valid derogation for this area at the relevant time. Where verification with the derogation lists is deferred, the inspection equipment shall ensure the integrity of the collected items.

This verification is carried out using the vehicle registration plate read automatically (under Article 27).

Where the vehicle has multiple viewable and readable vehicle registration plates, the right to drive in the ZFE-m is considered to exist as long as it exists for one of the plates.

Where the vehicle has multiple viewable and readable vehicle registration plates, this rule applies where at least one of the vehicle registration plates is shown on both images.

If an infraction is characterised, the equipment shall proceed to create an infraction message, as defined in Article 33. Otherwise, the individual data and images shall be immediately destroyed.

No incorrect characterisation is allowed for this processing.

Article 29 Limitation of the number of inspections carried out individually by each item of inspection equipment

The maximum number of vehicles that can be queried from the Crit'Air database or derogation lists in a day is one of the operating parameters of each item of inspection equipment and provided by the technical management system. Where the inspection equipment has carried out a quantity of inspections corresponding to the daily maximum, the inspection equipment shall no longer carry out any inspections until the end of the period.

Article 30 Distinction of moving vehicles

A vehicle is considered moving if its position changes in a certain way between two image captures at different times.

The equipment has a detection threshold based on a minimum distance of movement of the vehicle.

In the event that a vehicle is moving, the inspection equipment must be able to detect it. This shall be attested by the images produced which enable a human operator to ascertain the movement.

The taking into account of vehicles on the move or not for inspections is part of the parametrisation rules.

Article 31 Clocks

Each infraction message shall be time-stamped by the inspection equipment with the moment of detection of the vehicle. It must be possible to consult the time-stamp on site and remotely at any time.

Technical management system clock

The technical management system clock shall automatically synchronise at least once a day with a reference clock, connected to a national Electronic Time Stamping Service Provider (PSHE) or qualified equivalent within the meaning of Decree No. 2010-112 of 2 February 2010 implementing Articles 9, 10 and 12 of Order No. 2005-1516 of 8 December 2005 on electronic exchanges between users and administrative authorities. The difference between the technical management system clock and the reference clock shall not exceed 1 minute.

Inspection equipment clocks

Synchronisation of the inspection equipment clock with that of the technical management system may not take place between images of the same infraction message.

The difference between the inspection equipment clock and the technical management system clock shall not exceed 4 minutes. Regular monitoring of the drift of the inspection equipment clock must be ensured by the technical management system before each daily synchronisation in order not to exceed this margin. In case of non-compliance, the inspection equipment shall be stopped, a new synchronisation shall be carried out with the technical management system clock and the time-stamp defects shall be recorded according to the maintenance procedures defined by the manufacturer.

Article 32 Supply of two images

For all processing (detection, reading of the plates), proof of the infraction is based on images from its image capture equipment, with the frames described below.

In the case of vehicles found to be in breach, the image capture device shall provide two images on which the following can definitely be found:

- the inspected vehicle;
- the vehicle registration plate.

On the first image, the infringing vehicle shall be identified by means of two frames:

- the first frame is a quadrilateral framing the silhouette of the only vehicle under consideration, without prejudice to partial overlaying by other vehicles, even if other vehicles appear on the overall image;
- the second frame is a quadrilateral included in the first, adjusted to frame a single vehicle registration plate of the vehicle under consideration.

The frames are made obvious by their shade and ad hoc thickness.

The second image is taken from the same image capture device as the first image (same direction, same framing) and provides certainty that the vehicle has moved in relation to the first image where applicable.

When the vehicle has multiple vehicle registration plates read and the vehicle is in contravention, it shall issue an infraction message for each plate associated with the contravention.

Article 33 Creation and issuing of an infraction message

If the material elements of the infraction are detected, an infraction message (MIF) shall be created, consisting of a formatted file and two images.

images that have not led to the creation of an MIF within 24 hours of the time-stamp of the vehicle detection shall be removed immediately.

Where the vehicle has multiple vehicle registration plates read and the vehicle is in contravention, the equipment shall issue an infraction message for each plate associated with the contravention.

The MIF shall contain the following information:

- information on the inspection equipment (serial number, make, model, identifiers, technical parameters, software versions, integrity and security elements);

- information on verifications and tests of the equipment (date of approval, verification, test, organisation);

- daily equipment inspection quota information;

- information on the ZFE-m;

- permitted Crit'Air levels according to vehicle categories;

- legal parameters of the site: location (locality, GPS position, implantation location), position, traffic route, direction;

- details of the infraction (date, hour and minute, registration, Crit'Air class);

- information on the images transmitted;

- elements for securing the infraction message.

Each image shall have an inlay banner with the following information on it:

- date, time and minutes issued from the time stamp;
- identifiers: ZFE-m, inspection equipment;
- location: locality, place of location (e.g. lane and lane no.);
- vehicle registration number read;
- category and Crit'Air class of the monitored vehicle determined in the CQA base.

This infraction message shall be digitally signed and immediately transmitted to the criminal program in a secure manner. The latter shall acknowledge receipt thereof, and the message shall be destroyed in the equipment.

Article 34 Shutdown

If an inspection equipment fails (including a substantial change in its field of view), it shall go into maintenance status, automatically deactivate and stop issuing MIFs.

Annexes to the specifications for the official approval of automated inspection systems in low-emission mobility zones

ANNEX 1 – MANUFACTURER'S TECHNICAL FILE

General information on the company

Structure

Company name.

Nationality.

Commercial register number or equivalent in the case of establishment in another State of the European Union, the European Economic Area, the United Kingdom, Turkey or Switzerland, or the name of the representative established in the European Union, the European Economic Area, the United Kingdom, Turkey or Switzerland and evidence of representativeness for foreign manufacturers not established in the European Union, the European Economic Area, the United Kingdom, Turkey or Switzerland:
— legal form of the company:
— group or holding company (where applicable, specify whether the company is a subsidiary of a group and whether it has subsidiaries itself):
— registered office (address, telephone number, fax number, internet address);
— types of production and localisation of production units;
— total workforce of the company;
— administrative;
— technical;
— subcontracting: names, addresses and respective activities of possible subcontractors.

Manufacturing plant for products covered by the official approval application

One file should be prepared per plant:
— name and localisation;
— activities undertaken at plant (including, where applicable, activities other than those to which the official approval application relates);
— area (covered or uncovered);
— number of staff;
— production capacity;
— total stock and storage conditions;
— manufacturing equipment (type, brand, date of acquisition, specificity);
— description of quality system implemented.

In-factory operations

General indications

Organisation of inspections (specify the method used and the appointment of the individual or department responsible for the inspection);
Name and qualification of individual responsible for inspections;
Location of inspection operations (indicate, where appropriate, the tests and inspections requested from a laboratory outside the plant).

Inspection tests and methods

Provisioning inspections:
— nature (basic materials, certificates of conformity from suppliers);
— frequencies.

Inspections undertaken during manufacture:
— nature;
— frequencies.

Inspections carried out on finished products:
— nature;
— frequencies.

Results of inspections recorded in the document provided for this purpose.

ANNEX 2 – EQUIPMENT TECHNICAL FILE

The technical file provided for each equipment item or range submitted for official approval shall include:
— designation and references of the inspection equipment(s) and the components of the technical management system included in the scope of official approval and the identification of all the options proposed by the applicant;
— indication whether it is a prototype, series or pre-series;
— explanatory note giving a detailed description of the inspection equipment and its operating principles, including also its main characteristics (electrical, mechanical, etc.);
— explanatory note giving the detailed description of the constituents of the technical management system forming part of the official approval scope describing, in particular, the principle of interfacing with inspection equipment and devices external to that scope;
— design and manufacturing drawings, diagrams of components, sub-assemblies and circuits, detailed functional descriptions of software and inspection equipment software identification;
— descriptions and explanations necessary for the understanding of said drawings and diagrams and the operation of the equipment;
— a copy of the declaration of conformity of the inspection equipment with the European directives in force and the associated evidence of conformity with their requirements (test reports, etc.);
— software and its descriptive documents (source code and provision on a medium chosen by the body in charge of the type examination);
— detailed description of the encryption, electronic signature and cryptographic processes used;
— project manual for the use, installation and maintenance of the equipment;
— draft reports of post-installation tests and periodic tests. These reports shall be accompanied by the procedures established for conducting these tests;
— project digital logbook of the inspection equipment which must include at least the following information:

- — brand, type and serial number of the equipment and, where applicable, its components;
- — type examination certificate number;
- — information relating to the various verifications and tests;
- — identification of the entity that performed the verification (name, address and identification mark);
- — date and place of the verifications and tests;
- — quantitative and qualitative elements relating to verifications and tests;
- — decision issued following the verifications and tests;
- — official approval marking.

The digital logbook of the deployed inspection equipment shall include a digital historisation, sealing and signature device or any process that renders the content of the recorded information unalterable over time.

It comes in the form of a simple and sustainable digital deliverable for storage, transfer (a file or set of identified files), and uses sustainable technologies that allow easy proofreading and long-term integrity verification with common tools, and avoids any easy modification or alteration.