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**Subject:** *Authorization to conduct tests or research trials of automated vehicles on roads open to general traffic*

### INSTRUCTION 15/V-113

Article 47 of Royal Decree 2822/1998 of 23 December, approving the General Regulations on Vehicles (hereinafter referred as 'GRV') conferred on the Directorate-General for Traffic (hereinafter referred as 'DGT') the power to grant special authorizations to conduct extraordinary tests or research trials performed by manufacturers, body-builders and official laboratories. Similarly, Instruction 10/TV-66 set out the specific application and granting procedure for such authorizations.

However, technological progress in motor vehicle industry has made possible the design and development of devices and vehicles, which by their very nature and specialities, go beyond the existing regulations. Some of these technologies offer several levels of driving automation, which at their highest degree allow for full automation.

In order to ensure the improvement possibilities that these tests and trials will bring in terms of road safety and safe and sustainable mobility in Spain and, at the same time, to contribute to boosting the automotive industry and investment in research in our country, this instruction is published and aimed at regulating the granting of special authorizations to conduct tests or research trials of automated vehicles on roads open to general traffic.

#### DEFINITIONS

**AUTOMATED VEHICLE:** Any motor vehicle equipped with technology that allows its operation or driving without requiring the active control or supervision of a driver, whether such automated technology is enabled or disabled, permanently or temporarily.

For these purposes, active safety or driver assistance systems and equipment included in vehicles that require active human control or supervision for being operated or driven shall not be considered as automated technology.

Vehicles which incorporate technology functions associated with automation levels 3, 4 and 5 listed in Table I are subject to this instruction.

- **AUTOMATED MODE:** driving mode consisting in the operation or driving of the automated vehicle without the active control of a driver when its automated technology is enabled.



- **MANUAL MODE:** driving mode of an automated vehicle in which the automated technology is disabled and its operation or driving must be performed by the active control of a driver.

## 1. REQUIREMENTS FOR OBTAINING AUTHORIZATION TO UNDERTAKE AUTOMATED VEHICLE TESTING.

### Requirements for the authorization applicant

- As provided in the GVR, the following may apply for authorization to conduct tests and trials: manufacturers of automated vehicles, their body-builders and official laboratories. Without prejudice to the foregoing, and by analogy, the following shall likewise be construed as being able to apply for the authorization: the manufacturers or installers of the technology that allows the vehicle to be fully automated, universities and consortia involved in research projects under the terms described herein.
- The applicant must provide the documentation detailed in the GVR, in this instruction and in subsequent legislation which may be applicable.

### Requirements for the automated vehicle:

- The vehicles subject to this authorization shall be autonomous vehicles, under the terms provided for in this instruction.
- Each vehicle shall be uniquely identified by the applicant under the terms provided in this instruction.
- The automated vehicle owner or any person having an interest in its insurance shall be obliged to have and keep in force an insurance contract covering the limits of compulsory motor vehicle insurance, as well as civil liability for possible injury or damage to people or property while driving when performing the tests on roads open to general traffic.
- To ensure the maturity, safety and reliability of the automated driving systems, the automated vehicle owner must prove:
  - 1- That the vehicle has passed the procedures listed in Annex II to this instruction in a technical service accredited by the National Accreditation Body (ENAC) or
  - 2- That the competent authority of another Member State of the European Union has issued, through an equivalent prior control procedure, authorization to conduct tests on roads open to general traffic to automated vehicles with technologies and configurations of the same nature.



### **Requirements for the driver of the automated vehicle:**

- The driver of the automated vehicle must be designated and identified by the applicant for the authorization.
- The application may include several drivers.
- The applicant must submit a statement of responsibility on the skills of the designated drivers, accrediting under the applicant's responsibility that the drivers are familiar with the automated technology of the vehicle, have received the training required for the type of test requested and have the ability to drive, operate or control the vehicle safely and under any condition.
- The driver of the automated vehicle shall at all times be the person responsible for driving and operating the vehicle.
- It will be required that during driving the driver shall be ready and able to take full control of the vehicle at any time, whether inside the cabin or driving or operating the vehicle remotely. In any case, the driver shall be obliged to take full control of the vehicle in the event of an incident that poses a risk to the vehicle occupants or other road users.
- The automated vehicle driver must have held a valid driving license for a minimum of two years for the category of vehicle being tested.

## **2. SCOPE OF THE AUTHORIZATION**

This authorization is national in scope and sets out the sections of urban and interurban road on which tests or trials of the vehicle are permitted.

The authorization holders shall be responsible for ensuring that the vehicles fulfil the necessary technical characteristics to be driven on public roads and for compliance with all the requirements laid down in this instruction.

The duration of the authorization shall be for a maximum period of two years and may be extended successively for identical periods of time.

Driving outside the scope of the authorization must always be done in manual mode.

The vehicles must be registered. If not, they must obtain a temporary authorization pursuant to Article 44 of the GVR allowing them to be driven on roads open to general traffic.



### 3. SUBMISSION OF APPLICATIONS

The applicants shall submit:

- a) Application form completed in accordance with ANNEX I and addressed to the Subdirectorate-General for Mobility Management.
- b) Payment of fee I.4, in accordance with the provisions in Article 6 of Law 16/1979, of 2 October, on the Directorate-General for Traffic fees.
- c) Descriptive report of the tests and trials, including at least the following aspects:
  - Short description of the technology fitted to the vehicle, the principles used to ensure its safety and the autonomous mode activation system; the degree of automation shall be indicated according to the levels of table I.
  - General description of the Training plans given to the drivers of autonomous vehicles.
  - Identification and detailed description of the area requested for testing.
  - General description of the open road trial and test plan.
- d) Certificate for conducting autonomous driving tests, issued by an accredited technical service<sup>1</sup> in accordance with the procedures set out in Annex II or certification of having previously obtained - from the competent authority of another Member State of the European Union - through an equivalent prior control procedure<sup>2</sup>, an authorization to carry out testing of automated vehicles fitted with technologies and configurations of the same nature on roads open to general traffic.

### 4. FINAL DECISION

The final decision, either granting or refusing the special authorization requested, shall be issued by the Deputy Director-General for Mobility Management within one month of its registration on the Directorate-General for Traffic register.

In the event that the route authorised to conduct testing includes roads under the jurisdiction of other competent administrations with powers in traffic issues, the one-month period for issuing a final decision shall run from the day following receipt of the mandatory report by the relevant administration.

The Authorization granted shall contain the type of trial to be undertaken, its route and all other conditions under which these tests shall be conducted.

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<sup>1</sup> A period of one year from the date of publication of this instruction is allowed for adaptation, within which the Technical Services that furnish proof of having submitted an application for accreditation to ENAC and that, by way of a statement of responsibility, can prove that they have technical competence for implementing the activities contained in the certification procedure, may issue this certificate.

<sup>2</sup> Equivalence of the control procedures shall be assessed by DGT.



The Directorate-General for Traffic shall communicate the authorization to those administrations with powers in traffic issues within the territorial scope of the testing areas.

## 5. COORDINATION OF PROCEDURES

The Subdirectorate-General for Mobility Management shall coordinate the procedures concerning the authorization of automated vehicle tests or trials on roads open to general traffic and, to this end, may also make amendments to the corresponding Annexes and administrative procedures, where appropriate.

## 6. ENTRY INTO FORCE

This document is made public for general knowledge and compliance with the rules laid down herein.

Madrid, 13 November 2015

THE DIRECTOR-GENERAL FOR  
TRAFFIC



María Seguí Gómez

**TO ALL THE UNITS OF THIS PUBLIC BODY**

**Table I. - LEVELS OF AUTOMATION**

NIVEL	DENOMINACION	DEFINICION	TAREAS DE CONDUCCION		CONDUCCION LONGITUDINAL (ACELERAR/FRENAR) Y LATERAL (DIRECCION)	CONTROL DEL ENTORNO	RECUPERACION DE LAS TAREAS DE CONDUCCION EN CASO DE CONTINGENCIA	TAREAS DE CONDUCCION REALIZADAS POR EL SISTEMA
			CONDUCTOR	SISTEMA				
0	SIN AUTOMATIZACION	El conductor realiza continuamente todas las tareas asociadas a la conducción, incluso cuando son mejoradas a través de algún aviso o la intervención de sistemas. El sistema de ayuda a la conducción desarrolla una tarea específica, bien realiza la conducción dinámica lateral o longitudinal utilizando la información del entorno del vehículo, mientras que el conductor realiza el resto de tareas de conducción. El sistema de ayuda a la conducción desarrolla la conducción dinámica lateral y longitudinal utilizando la información del entorno del vehículo, mientras que el conductor realiza el resto de tareas de conducción.	El conductor realiza continuamente la tarea de conducción dinámica lateral y longitudinal.	NIA	CONDUCTOR	CONDUCTOR	CONDUCTOR	NIA
1	CONDUCCION ASISTIDA	El sistema de ayuda a la conducción desarrolla la conducción dinámica lateral y longitudinal utilizando la información del entorno del vehículo, mientras que el conductor realiza el resto de tareas de conducción.	El conductor realiza la tarea de conducción dinámica lateral o longitudinal.	El sistema realiza la conducción longitudinal lateral que no esté realizando el conductor.	CONDUCTOR Y SISTEMA	CONDUCTOR	CONDUCTOR	ALGUNAS
2	CONDUCCION PARCIALMENTE AUTOMATIZADA	El sistema de ayuda a la conducción desarrolla la conducción dinámica lateral y longitudinal utilizando la información del entorno del vehículo, mientras que el conductor realiza el resto de tareas de conducción.	Supervisión de las tareas de conducción dinámica y el entorno.	Conducción longitudinal lateral en un caso de uso definido.	SISTEMA	CONDUCTOR	CONDUCTOR	ALGUNAS
3	CONDUCCION AUTOMATIZADA CONDICIONADA	El sistema de conducción automatizada desarrolla todas las tareas de la conducción con la expectativa de que el conductor responda adecuadamente a la petición de intervención por parte de éste.	No es necesaria la supervisión constante de la conducción automatizada pero siempre debe estar en una posición adecuada para reanudar el control.	Conducción longitudinal lateral en un caso de uso definido. Reconoce sus límites de rendimiento y pide al conductor reanudar la tarea de conducción dinámica con margen de tiempo suficiente.	SISTEMA	SISTEMA	CONDUCTOR	ALGUNAS
4	CONDUCCION ALTAMENTE AUTOMATIZADA	El sistema de conducción automatizada desarrolla todas las tareas de la conducción, incluso si el conductor no responde adecuadamente a la petición de intervención por parte de éste.	El conductor no es requerido durante el caso de uso.	Conducción longitudinal lateral en todas las situaciones de un caso de uso definido.	SISTEMA	SISTEMA	SISTEMA	ALGUNAS
5	CONDUCCION PLENAMENTE AUTOMATIZADA	El sistema de conducción automatizada desarrolla todas las tareas de la conducción bajo todas las circunstancias de la vía y ambientales.	NIA	Conducción longitudinal lateral en todas las situaciones encontradas durante toda la prueba. No se requiere se requiere conductor.	SISTEMA	SISTEMA	SISTEMA	TODAS



### Annex I. REQUIRED DATA TO REQUEST AN AUTOMATED DRIVING TEST



### AUTOMATED VEHICLE TESTING REQUEST



SUBDIRECCIÓN GENERAL DE GESTIÓN DE LA MOVILIDAD

<b>DATA ON THE INTERESTED PARTY:</b>						
<b>IDENTIFICATION</b>						
Name/Business name:				NIF/NIE/CIF:		
Surname 1:				Surname 2:		
<b>ADDRESS</b>						
Type of road:	Name of the road/street:				Zip code:	
Number:	Block:	Building:	Stairs:	Floor:	Door:	Km.:
Municipality:		City/town:			Province:	
<b>DATA ON THE REPRESENTATIVE</b>						
Name:				NIF/NIE:		
Surname 1:				Surname 2:		
<b>DATA ON THE VEHICLE TO BE TESTED</b>						
Registration number:	Chassis	Make:	Model:	Type <sup>1</sup> :	Lev. <sup>2</sup> :	
Name and surname of the driver:				NIF/NIE:		
Registration number:	Chassis	Make:	Model:	Type <sup>1</sup> :	Lev. <sup>2</sup> :	
Name and surname of the driver:				NIF/NIE:		
Registration number:	Chassis	Make:	Model:	Type <sup>1</sup> :	Lev. <sup>2</sup> :	
Name and surname of the driver:				NIF/NIE:		
<b>DATA ON THE TEST OR TRIAL</b>						
Type of test to be undertaken and purpose:						
Reasons to support vehicle testing on public roads:						
Planned times of testing:						
Start:	Start:	Start:	Start:	Start:	Start:	
End:	End:	End:	End:	End:	End:	
Maximum time allowed for the test:						
The following are planned to be recorded:						
<b>INFORMATION ON ROADS</b>						
Province:						
Road	Section	Speed			Stopping	
		Maximum	> General speed limit	Abnormally reduced		

- (1) Type: Type of EU approval (M1, N1,...)
- (2) Level: Level of vehicle automation. See Table Annex I.



## ANNEX II

### CERTIFICATE TO PERFORM OPEN ROAD TESTS OF AUTOMATED VEHICLES

#### Objective:

The purpose of this Annex is to:

- 1- Define the process for the recognition and accreditation of entities as authorised technical services to issue these certificates following the protocols of the Spanish National Accreditation Body (ENAC).
- 2- Establish a standardized procedure for the certification of vehicles for testing of automated driving on public roads by virtue of this Instruction of the Spanish Directorate-General for Traffic (DGT).

#### **1.1 Process for the recognition and accreditation of entities as authorised technical services following the protocols and instructions of ENAC:**

Only an Authorized Technical Service accredited by the National Accreditation Body (ENAC) or by another national body that has successfully undergone peer assessment foreseen in Regulation (EC) No. 765/2008 of the European Parliament and of the Council of July 9th 2008 can perform the assessment activities described in this document. In case of suspension or withdrawn of the accreditation, the entity is not authorized to continue this activity.

The accreditation body will act according to its assessment procedures.

#### **1.1.1 Requirements of the applicant for accreditation as authorized technical service:**

- Be legally identifiable entity with legal personality.
- Before applying for accreditation, the entity must have experience in carrying out the activities for which it is applying for the accreditation or similar automotive tests.
- Know and comply with the accreditation criteria that are applicable to it.
- Initiate the accreditation process with ENAC.



## **2.1 Procedure for obtaining the certification of vehicles for carrying out tests of autonomous driving on roads open to traffic in general:**

The sole objective of the standard procedure for the certification of vehicles for carrying out automated driving tests is to ensure the maximum level of safety for persons performing these tests as well as for other road users. This procedure consists of three main parts:

- Documentation
- Inspection
- Dynamic checks

### **Documentation**

The documentation requirement refers to the identification of the type of vehicle used for testing (dimensions, mass, power, etc.), its base approval (if applicable), the identification of risks by and according to the criteria of the applicant and the countermeasures implemented, the functionalities to be tested and those for which the vehicle is not designed, the emergency stop system and other safety features (e.g. electromagnetic compatibility).

This documentation shall be the basis for identifying the type of vehicle and for continuing the next procedural steps: inspection and dynamic testing.

### **Inspection**

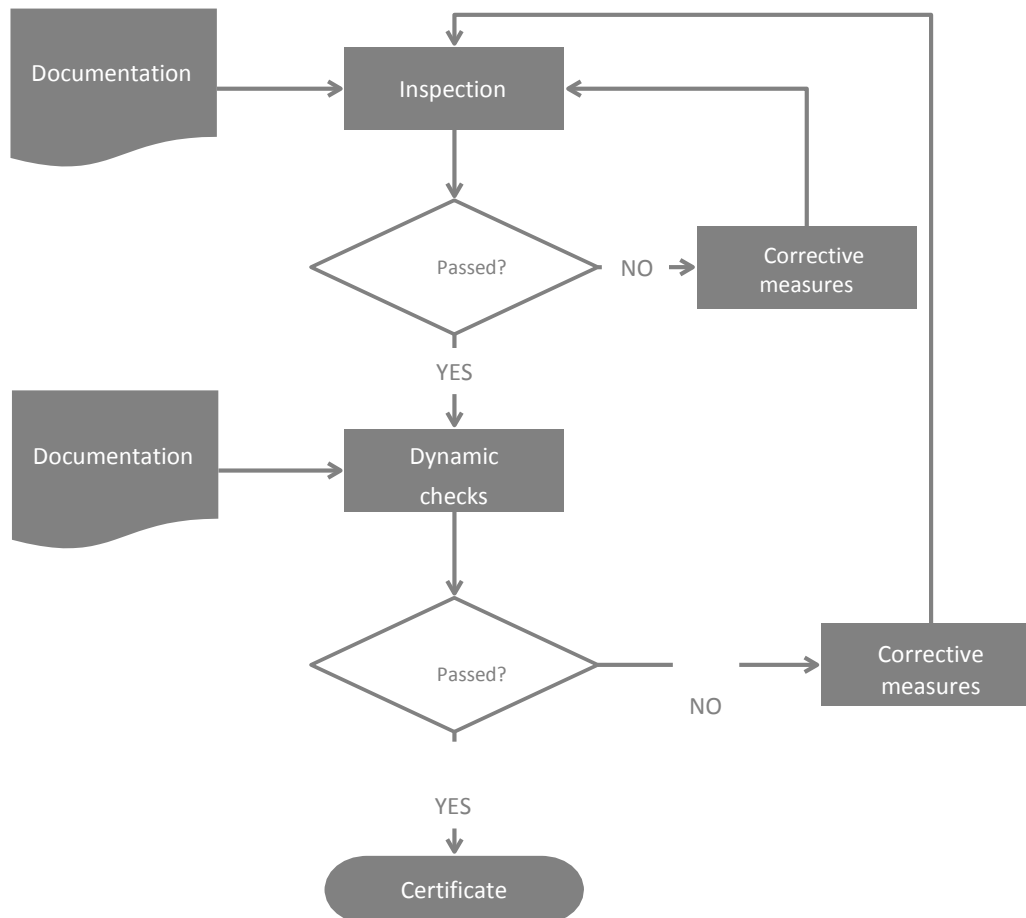
The inspection process is carried out (from the documentation presented) in order to approve or reject testing with prototype vehicles. The inspection always refers to safety aspects such as external projections, interior space, condition of wheels or fastening of instrumentation/ballast (if applicable). The inspection permits moving on to the next step: the dynamic check.

### **Dynamic checks**

The dynamic test is the last step of this procedure and is divided into manual driving test, checking of *override* systems (switching to manual driving) and testing of basic functionalities affecting the safety of vehicle occupants and other road users. This shall make it possible to certify that the vehicle:

- 1) can be driven manually,
- 2) can regain manual control as required by the driver or at the request of the manager/operator, and
- 3) in automated driving mode can maintain a minimum level of safety (e.g. braking when a pedestrian crosses).

The procedure is summarized in Figure 1 below.



**Figure 1. Block diagram of the certification procedure**

The procedure is solely intended to ensure safety during the preparation and execution of tests to be performed on public roads and should be performed by authorized technical services (according to ENAC protocols and criteria). The procedure has been developed using existing and reference standards for each of the functions (e.g. ISO standards, UNECE, and Euro NCAP protocols).

The procedure is detailed in the following sections: documentation, inspection and dynamic check.

### 2.1.1. Documentation

#### **Simplified technical specifications sheet:**

With the objective to report the vehicle technical specifications (mass and dimensions, power unit, transmission, suspension, steering, lights and light-signalling devices, braking system and body) a simplified technical specifications sheet must be presented at the beginning of any technical verification.

The simplified technical specifications sheet is regulated in the RD 750/2010, of 4 June, regulating the type-approval of motor vehicles as well as their systems, components and parts (see Annex II).

From the Simplified Technical Specifications Sheet a Technical Specifications Sheet shall be created that shall be necessary to obtain a provisional license plate which is required for the vehicle to be driven on public roads.

#### **Technical specifications sheet:**

The Technical Specifications Sheet (see Annex II) is a document based on the Simplified Technical Specifications Sheet provided by the applicant.

The Technical Service authorized to provide this type of document shall be responsible for checking that all data provided by the applicant are true and facilitating the documentation necessary to the applicant to present to the Spanish Directorate-General for Traffic (DGT).

This document, together with the *Safety Check* (see Annex III) and the results of the tests, shall be the minimum requirements to be presented at DGT to obtain a registration certificate (provisional licence plate).

#### **Risk Assessment:**

It is necessary that manufacturers of autonomous vehicles identify all situations that pose a potential risk based on their probability of occurrence, controllability by the driver and severity in order to ensure safe testing.

Risk assessment takes into consideration all modes of operation and potential failures of the vehicle systems and, consequently, it can be assessed if risks can be taken or not.

The reference documents for the documentation to be submitted with respect to the risk assessment are the HARA (Hazard Risk Analysis), which forms the basis of all functional safety activity according to ISO 26262, and FMEA (Failure Mode Effects Analysis).

It shall be a condition for accepting the risk assessment that the manufacturer presents a document showing that the risk assessment was carried out by a HARA, an FMEA or an equivalent method must be presented. Potential risks and weaknesses identified that cannot be accepted for driving on public roads shall be required to be controlled or mitigated in order to issue the certificate.

### **Control of software versions:**

Due to that a large part of an automated system is the software, all the verifications described in this document shall be made on a software version previously tested in the tests.

However, during testing and data collection, improvements in the system in the form of new software versions may be implemented. These new versions must also meet minimum safety requirements.

To avoid the additional costs of the full implementation of the certification process for each level, version or review of software used for testing, documentation proving that the system has been extensively tested on test bench, simulation or test tracks must be available.

### **Emergency stop and "override" system documentation of automated system:**

The documentation must demonstrate that the following minimum requirements have been taken into account:

#### Emergency shutdown:

1. Have an emergency shutdown to stop the action of the actuators (steering wheel, brake, throttle and gearbox).
2. The emergency stop should be accessible by any vehicle occupant or accessible to the vehicle controls at all times.
3. The brake pedal actuator cannot interfere with the driver's ability to actuate the brake pedal.
4. The maximum torque of the steering actuator must be able to be overcome by the driver at all times.

#### Override:

1. The *override* must be detected after the following events:
  - a. The driver presses the brake pedal
  - b. The driver presses the accelerator pedal
  - c. The driver turns the steering wheel
2. If an *override* is detected, all the system actions must stop until the driver manually restarts the automated driving process.

It must be demonstrated that both the *override* and emergency stop are independent of each other and from the automated driving algorithms and that they always take precedence over the automated driving actions.

## Documentation of the system's functionality/design and testing scenarios:

### Functionalities:

This document must describe the functionality of the automated driving system with the objective of identifying the possible scenarios that the vehicle may face and those that are to be assessed while driving on public roads. In this way, it will be possible to predict possible traffic conditions that may occur and the interaction with other road users.

To do this, the possible test scenarios to be evaluated along with manoeuvres that are to be reproduced must be defined.

Likewise, all real traffic conditions that it is known beforehand that the automated driving system cannot address must be described. The purpose of this information is to identify traffic situations to be avoided and to define appropriate measures to avoid them.

### Tests:

**Test scenarios:** These scenarios are the ones to be evaluated during driving in real traffic conditions. The vehicle may only travel in automated mode (under the supervision of a driver) in the scenarios described as test scenarios.

As described in Annex IV, for each test scenario the following should be indicated:

- Type of traffic situation
  - o urban (<50 km/h in city)
  - o interurban (<100 km/h on road)
  - o motorway (<120 km/h on motorway)
- Infrastructure
  - o Type of road to be used
    - urban area
    - pedestrian area
    - secondary road with two-way traffic lanes without separation
    - secondary road with two-way traffic lanes with separation
    - main road, 1 lane
    - main road, multiple lanes
    - dual carriageway
    - motorway
  - o Roads identified as meeting these conditions
- Traffic conditions
  - o Traffic density required
  - o Vehicles / test users that shall participate in the test
  - o Vehicles / users outside the test that may be involved in it
- Test conditions

- Light conditions sought
- Weather conditions sought
- Manoeuvres to be performed
  - Type of manoeuvre
  - Expected limit conditions:
    - Maximum speed
    - Maximum longitudinal deceleration
    - Maximum lateral acceleration

### Restricted test scenarios:

Those scenarios in which the vehicle specifically cannot be driven because it could pose a risk to the automated vehicle, its occupants or other users of public roads due to the vehicle's technical limitations. To do this, the form in Annex IV must be completed.

For each test scenario the following should be indicated:

- Type of traffic situation to be avoided
  - urban (<50 km/h in city)
  - interurban (<100 km/h on road)
  - motorway (<120 km/h on motorway)
- Infrastructure
  - Type of road to be avoided
    - urban area
    - pedestrian area
    - secondary road with two-way traffic lanes without separation
    - secondary road with two-way traffic lanes with separation
    - main road, 1 lane
    - main road, multiple lanes
    - dual carriageway
    - motorway
- Traffic conditions to be avoided
  - Maximum number of vehicles with which the vehicle may interact at the same time
  - Vehicles / users outside the test that may not intervene in the test
- Test conditions to be avoided
  - Light conditions
  - Weather conditions
- Manoeuvres to be avoided
  - Type of manoeuvre
  - Limit conditions that the vehicle cannot deal with:
    - Maximum speed
    - Maximum longitudinal deceleration
    - Maximum lateral acceleration

### **Cyber security:**

The applicant must ensure that all test vehicles and all their systems have appropriate levels of cyber security. The electronics systems necessary to enable automated driving functions require high levels of software for operation. This increases their vulnerability to cyber attacks that could compromise the safety of the vehicle occupant and other road users.

### **Electromagnetic compatibility (EMC)**

Electronic components that the vehicles currently use may be sensitive to electromagnetic emissions on the road or emitted by other components of the vehicle itself.

Electronics is the base of advanced safety systems (e.g. ADAS) and therefore it is anticipated that future prototypes of automated vehicles shall be even more heavily loaded with electronic systems.

To avoid unexpected failures of these systems, the applicant must ensure that the equipment installed complies with current legislation regarding electromagnetic emissions.

### **2.1.2. INSPECTION**

Vehicle inspection shall be conducted on the basis of documentation provided by the applicant. The inspection shall be performed by an Authorized Technical Service and using the template in Annex III (depending on the type of vehicle).

This template includes the following inspection sections:

#### **Identifying information of the vehicle:**

The following parameters are uniquely identified for monitoring vehicle inspection:

- Sample code: an identification number is granted to each applicant vehicle.
- VIN: If available, the chassis number of the vehicle shall be registered.
- Manufacturer: The manufacturer of the test vehicle shall be registered, even if it is not the same as the company applying for the test.
- Vehicle model
- Registration number: If the vehicle is already registered, the registration number shall be recorded, both regular and "red" plates.
- Propulsion: electric, hybrid or internal combustion.
- Type of fuel used
- Total mileage before testing begins

- Place of inspection
- Date and time of inspection
- Full name of verifier
- Signature of verifier

### **Inspection of the vehicle exterior:**

Subsequently an inspection of the vehicle exterior shall be carried out considering the following parameters:

- Windscreen and other windows: The level of visibility and absence of cracks is evaluated.
- Rear-view mirrors: Cleanness, absence of cracks and possibility of adjustment is evaluated.
- Wiper blades: their condition is registered.
- Lighting and light-signalling devices: Full-beam, dipped-beam, position, brake, turn signals, reversing light, fog light. Assessment of exterior condition and proper operation.
- Opening and closing of doors: Correct operation
- Fuel cap/flap: Condition, correct closing
- Camouflage: Attachment, visibility, enabling lighting and signalling and opening and closing of doors.
- Exterior protrusions
- Masses and dimensions

### **Engine bay inspection:**

The level and condition of the following components shall be assessed:

- Engine oil
- Coolant
- Brake fluid
- Clutch fluid/clutch cable
- Automatic transmission fluid
- Power steering fluid
- Windscreen wiper fluid
- SCR system fluid
- Low-voltage battery: Attachment of battery, cables and no acid residues
- General visual inspection: No leaks, damage/cracks, deformations, loose parts ... in mechanical parts, pipes and wiring
- Fuel.

### **Inspection of the vehicle interior:**

Regarding the internal inspection, the following parameters are assessed:

- Condition of ABS and ESP: Check that ABS or ESP are not inactive, failed or unknown. If they are disconnected, modified or unknown because of the tests to be performed, documentation justifying this shall be attached.
- Condition of airbags: Check that driver and occupant airbags are not inactive, disabled or unknown. If they are disconnected, modified or unknown because of the tests to be performed, documentation justifying this shall be attached.



- Other tell-tales or indicators: Check they do not show failure
- Guides, anchorages, seats, headrests and seat belts: Condition, attachment and possibility of adjustment (in all seats)
- Substitute seat belts or 3/4-point safety harness/harnesses (if fitted): Check condition, proper installation, fastening and possibility of adjustment.
- Interior roll bars: Check condition and attachment
- Horn: Operation
- Windshield wipers: Operation and surface wiped
- Interior rear-view mirror: Attachment and possibility of adjustment
- Accelerator pedal: Condition, attachment, play, travel, return and stiffness
- Service brake pedal: Condition including pedal rubbers, attachment, play, travel, return and stiffness
- Clutch pedal: Condition, attachment, play, travel, return and stiffness
- Gear lever: Condition, attachment, play, travel and stiffness
- Lever, parking brake pedal or electric parking brake: Condition, attachment, play, travel and stiffness. Correct operation of electric brake if fitted.
- Steering wheel and steering linkages: Condition, attachment, play, travel and stiffness
- Opening and closing of doors: Operation
- Driving position (accessible and functional controls)
- Emergency stop
- Emergency exits
- Seating places

### **Wheels and wheel arch assessment:**

The following parameters relating to the wheels and wheel arch shall be assessed:

- Tyre condition: No cracks, punctures, leaks or ageing. Even wear.
- Tyre tread depth (mm)
- Unladen tyre pressure
- DOT tyres
- Wheel tightening torques: 120 Nm for passenger cars, if not specified. Mark the screws/nuts or place parts in "S"
- Wheel bearing: No excessive play in bearing bushing
- Suspension: Attachment, no free play, no leaks in shock absorber
- Brake circuit pipes: Condition, attachment, absence of cracks and leaks
- ABS sensor wiring: Condition, fastening
- Discs and pads: Visual inspection of wear condition and absence of cracks

### **Vehicle underbody assessment:**

Regarding the underbody, the following data are recorded:

- Mudguard: Condition and attachment

- Suspension system: Attachment and condition of components and connections (no cracks or other damage)
- Exhaust line: Condition and attachment
- Hydraulic brake circuit: Condition, attachment, no cracks, rubbing or leaks
- Fuel system: Condition, attachment, no cracks, rubbing or leaks
- Engine and transmission line: Condition, attachment, no cracks, rubbing or leaks
- Undercover: Condition and attachment

#### **Others:**

In addition to the parameters evaluated in the previous sections regarding the exterior, interior, engine bay, wheels and wheel arches and underbody other elements shall also be evaluated if they are installed. If they are not installed, this must be detailed in the inspection report. These other elements are:

- Ballast: Condition, attachment, position
- Measuring equipment, display screens or auxiliary batteries: Condition, attachment, position

#### **Verdict:**

Based on the information provided by the verifier, it shall be determined whether the vehicle is able to perform the dynamic check.

If anything is not clear enough, it shall be checked individually.

#### **2.1.3. DYNAMIC CHECK:**

##### **Conventional (manual) driving:**

In the vehicle, even if in automated driving mode, an occupant with access to the vehicle's manual controls and in charge of supervising the performance of the tests and acting in case of emergency.

It is imperative that the vehicle can be driven in manual mode at any time. Thus, this part of the certification shall check that the vehicle complies with this feature, by performing the following operations:

- Straight-line driving up to 50 km/h to check speedometer and no deviation, vibration, noise or other anomalies.
- Bend exit up to 50 km/h for checking self-return of the steering wheel and no vibration, noise or other anomalies.
- Weaving within the same lane with initial speeds of 50 km/h for the evaluation of stability, control and no vibration, noise or other anomalies
- Braking up to 0.5 g at initial speeds of up to 50 km/h for checking absence of deviation, noise, vibrations or other anomalies
- Braking to wheel lock-up or activation of ABS with initial speeds of 50 km/h for checking absence of deviation, vibration, noises or other anomalies
- 3/4 throttle acceleration up to 80 km/h

- Straight-line driving up to 120 km/h for checking absence of deviation, vibrations, noises or other anomalies.
- Overall evaluation (up to 120 km/h) for checking the absence of deviation, vibrations, noises or other anomalies.

The first 5 tests apply to all vehicles while the last three shall not apply to vehicles intended solely for urban use and which due to their technical capabilities (e.g. maximum speed) cannot perform the tests.

### Override: steering wheel

At any stage of automated driving driver override must be detected after applying a maximum torque of 10 Nm at the wheel. The following scenarios shall be checked:

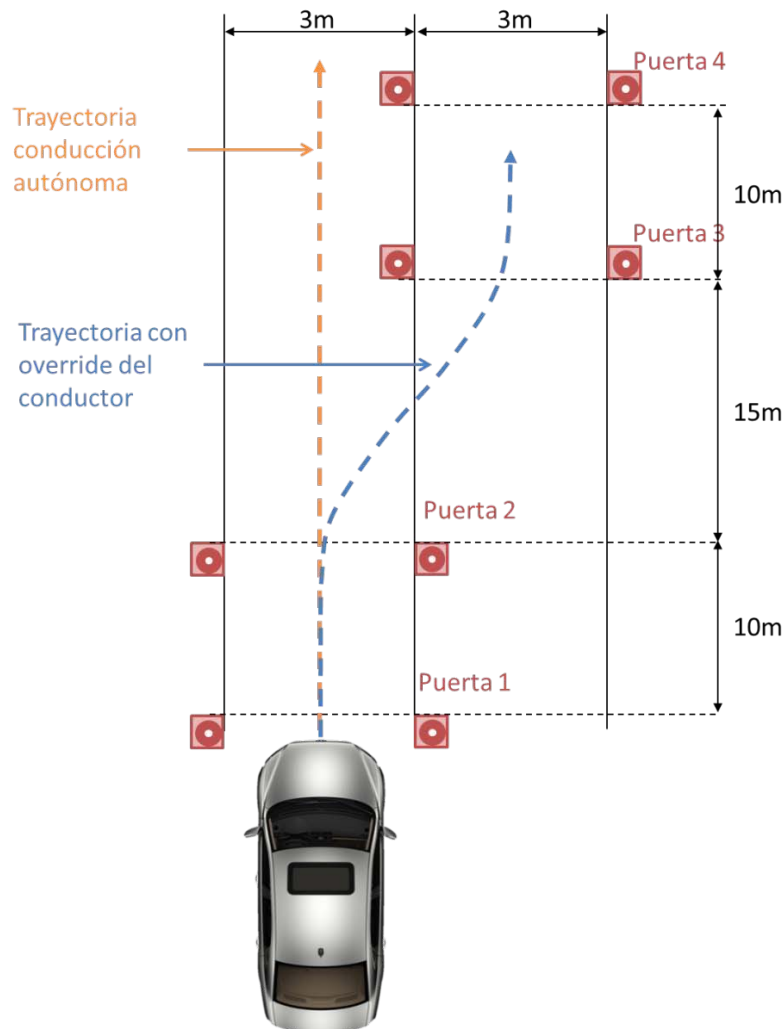
Speed	Radius of curvature of the trajectory	Driver's intention	Maximum torque applied by the driver
30 ±1 Km/h	Infinite, straight	Turn to right	< 10Nm
30 ±1 Km/h	Infinite, straight	Turn to left	< 10Nm

If a scenario requires a torque higher than 10 Nm by the driver the test shall not be passed. Having detected override, the automated driving system must stop all its actions.

Procedure (see Figure 2):

1. The car must go in automated driving mode, at constant speed while maintaining a straight path. The test shall be carried out the first time without driver *override* to make sure the car is able to maintain the desired path for 100 m. During this test the driver will not exercise any kind of control or contact with the vehicle controls.
2. If the car passes the automated driving test then it shall proceed to the *override* test:
  - a. The automated driving process starts at constant speed in straight line.
  - b. The distance travelled in automated driving before reaching door 1 must be greater than 100 m.
  - c. The driver may not exercise any kind of control or contact with the vehicle controls before reaching door 1.
  - d. While the vehicle is between the door 1 and 2 the driver shall take over the steering wheel in order to modify the vehicle's path.
3. The test is passed if the following conditions are met:
  - a. The vehicle has maintained the desired trajectory while in automated driving mode.
  - b. The driver has carried out the change of path within the limits defined by the doors.

- c. The maximum torque applied by the driver during change of path has not exceeded 10 Nm.
- d. The automated driving process has stopped before reaching door 3.



**Figure 2. Steering override test diagram**

### **Override: brake pedal**

At any stage of automated driving, driver override must be detected when actuating the brake pedal.

The test shall be conducted at a constant speed of 100 km/h, in a straight line and on dry asphalt (or any other surface with friction coefficient > 0.9). If the vehicle is unable to reach 100 km/h in automated driving, the vehicle shall be tested at the maximum speed allowed by the system.



Procedure:

1. The car must go in automated driving mode, at constant speed while maintaining a straight path. The test shall be carried out the first time without driver *override* to make sure the car is able to maintain the desired path for 200 m.  
During this test, the driver cannot exercise any type of control or contact with the vehicle controls.
2. If the car passes the automated driving test then it shall proceed to the *override* test:
  - a. The automated driving process starts at constant speed and in straight line.
  - b. The driver may not exercise any kind of control or contact with the vehicle controls before having travelled 200 m maintaining the desired speed.
  - c. After travelling 100 m the driver shall apply a maximum force of 300 N on the brake pedal.
3. The test is passed if the following conditions are met:
  - a. The vehicle has maintained the desired trajectory in automated driving mode.
  - b. The maximum deceleration of the vehicle has exceeded  $0.8 \text{ m/s}^2$ .
  - c. The average deceleration during braking has exceeded  $0.7 \text{ m/s}^2$ .
  - d. Automated driving mode has stopped during braking.

The average and maximum deceleration is measured according to ISO 43.040.40.

### Override: accelerator pedal

At any stage of automated driving, driver *override* must be detected when actuating on the accelerator pedal.

The test shall be conducted at a constant speed of 30 km/h, in a straight line and on dry asphalt (or any other surface with friction coefficient  $> 0.9$ ). The manoeuvre consists of approaching a parked vehicle, and as the vehicle starts its deceleration phase to prevent the impact, the driver presses the accelerator to the floor. This manoeuvre checks that the driver's decision always prevails over the automated driving system.

#### Procedure:

1. The car must go in automated driving mode, at constant speed while maintaining a straight path. The test shall be carried out the first time without driver *override* to make sure the car is able to stop without reaching impact.
2. If the car passes the automated driving test then it shall proceed to the *override* test:
  - a. The automated driving process starts at constant speed in straight line.
  - b. The driver may not exercise any type of control or contact with the vehicle controls during the approach phase.
  - c. When the automated driving system has slowed the vehicle to less than 25 km/h the driver shall press the accelerator pedal to the floor.
3. The test is passed if:
  - a. The vehicle has maintained the desired path and prevented impact in automated driving mode.
  - b. The override has resulted in decreased vehicle speed and avoids impacting with the parked car.
  - c. The automated driving process has stopped after the driver *override*.

The parked car shall comply with the requirements of ANNEX A protocol Euro NCAP "TEST PROTOCOL – AEB SYSTEMS" VERSION 1.1

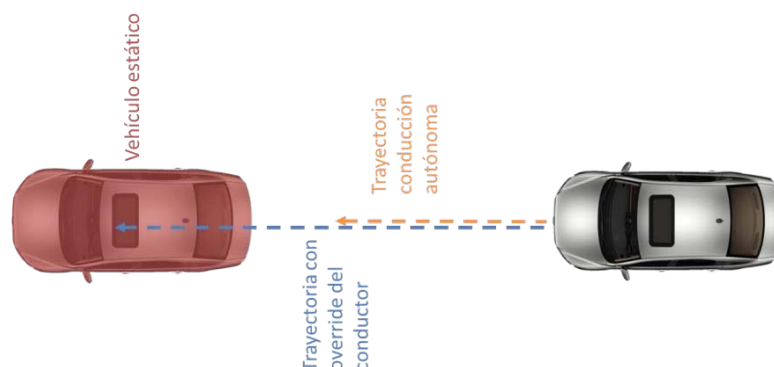


Figure 3. Diagram of test procedure for *override* by accelerator pedal

### **Override: Emergency shutdown (e.g. emergency stop button):**

At any stage of automated driving, driver *override* must be detected when actuating the emergency shutdown system.

The test shall be conducted at a constant speed of 30 km/h in a straight line and on dry asphalt (or any other surface with friction coefficient > 0.9). The manoeuvre consists of approaching a parked vehicle, and as the vehicle starts its deceleration phase to prevent the impact, the driver actuates the emergency button. This manoeuvre checks that the driver's decision always prevails over the automated driving system.

#### Procedure:

1. The car must go in automated driving mode at constant speed while maintaining a straight path. The test shall be carried out the first time without driver *override* to make sure the car is able to stop without reaching impact.
2. If the car passes the automated driving test then it shall proceed to the *override* test:
  - a. The automated driving process starts at constant speed in straight line.
  - b. The driver cannot exercise any type of control or contact with the vehicle controls during the approach phase.
  - c. When the automated driving system has slowed the vehicle to less than 25 km/h the driver shall press the emergency button.
3. The test is passed if:
  - a. The vehicle has maintained the desired path and prevented impact in automated driving mode.
  - b. The override has resulted in impact with the parked car.
  - c. The automated driving process has stopped after the driver *override*.

The parked car shall comply with the requirements of ANNEX A protocol Euro NCAP "TEST PROTOCOL – AEB SYSTEMS" VERSION 1.1.

## Longitudinal control

The objective of these tests is to assess the ability of the vehicle to maintain the longitudinal control and to brake in an emergency. Minimum longitudinal vehicle controllability is required so as to ensure that in automated driving mode the vehicle can stop stably and in case of an emergency.

Maximum wet deceleration requirements and capacity of system to avoid collisions with other vehicles and run-overs of road users are defined.

The braking test, the autonomous emergency braking test and lateral control test are defined in the following sections:

### Braking test:

The main objective of this test is to check and ensure the correct operation of the braking system.

To meet this objective, the vehicle must be able to stop in different conditions and situations as explained below.

The regulation ECE R13H Uniform provisions concerning the approval of passenger cars with regard to braking and the ECE R13 Uniform provisions concerning the approval of vehicles of categories M, N and O with regard to braking has been taken as reference (L-category vehicles are excluded from this test, but shall have a test to ensure a minimum performance).

Since the intention is to check that the vehicle conforms to the rules of the braking regulation, not all tests required by these regulations are carried out. Only those tests considered basic in the operation of the brake system shall be performed.

The test specifications are adapted to the vehicle when necessary such as in the case the initial test speed conditions are not met.

Type 0 – Cold test (Temperature between 65 and 100 °C)

The vehicle shall be laden, the distribution of its mass among the axles being as indicated by the manufacturer. Each test shall also be repeated with the vehicle unladen.

For each case (laden or unladen) the test shall be conducted as follows:

- Test with the engine disconnected (for more details see UNECE Regulation No. 13 - Rev.8 - Amend.2 and Regulation No. 13-H - Rev.2 - Amend.3)
- Test with the engine connected (for more details see UNECE Regulation No. 13 - Rev.8 - Amend.2 and Regulation No. 13-H - Rev.2 - Amend.3)



The limits prescribed for minimum braking efficiency, both for tests with the vehicle unladen and with it laden for M1 are set forth below:

Type 0 – Test with the engine disconnected	v s ≤ d <sub>m</sub> ≥	100 km/h 0.1v + 0.0060v <sup>2</sup> (m) 6.43 m/s <sup>2</sup>
Type 0 – Test with the engine connected	v s ≤ d <sub>m</sub> ≥	80%v <sub>max</sub> ≤ 160 km/h 0.1v + 0.0060v <sup>2</sup> (m) 5.76 m/s <sup>2</sup>
	f	6.5 - 50 daN

The limits prescribed for minimum performance, both for tests with the vehicle unladen and with the vehicle laden for M2, M3 and N shall be those set out below:

	Category	M2	M3	N1	N2	N3
	Type of test	0 - I	0 - I	0 - I	0 - I	0 - I
Type 0 – Test with the engine disconnected	v	60 km/h	60 km/h	80 km/h	60 km/h	60 km/h
	s ≤ d <sub>m</sub> ≥	0.15v + 5.0 m/s <sup>2</sup> <sup>130</sup>				
Type 0 – Test with the engine disconnected	v - 0.80v <sub>max</sub> but without	100 km/h	90 km/h	120 km/h	100 km/h	90 km/h
	s ≤ d <sub>m</sub> ≥	0.15v + 4.0 m/s <sup>2</sup> <sup>103.5</sup>				
	F ≤					

Where:

v = test speed, in km/h

s = braking distance, in m

d<sub>m</sub> = average stabilized deceleration, in m/s<sup>2</sup>

f or F= force applied to brake pedal, in daN

v<sub>max</sub> = maximum vehicle speed, in km/h

Type I - Fatigue test

Warm-up:

The service brakes of all the vehicles shall be tested accelerating and braking a number of times (respecting the braking intervals required between each braking), the vehicle being laden in the conditions shown in the following table (the initial braking shall be 3 m/s<sup>2</sup>):

Conditions	$v_1$ (km/h)	$v_2$ (km/h)	$\Delta t$ (sec)	n
M1	$80\%v_{max} \leq 120$ km/h	$0.5v_1$	45	15
M2	$80\% v_{max} \leq 100$ km/h	$0.5v_1$	55	15
N1	$80\% v_{max} \leq 120$ km/h	$0.5v_1$	55	15
M3,N2,N3	$80\% v_{max} \leq 60$ km/h	$0.5v_1$	60	20

Where:

$v_1$  = initial speed when starting braking

$v_2$  = speed at end of braking

$v_{max}$  = maximum vehicle speed

n = number of brakings

$\Delta t$  = duration of braking cycle: time between the start of one brake application and the start of the next.

Hot performance:

At the end of the Type I test, the hot performance of the service braking system shall be measured in the same conditions as for the Type 0 test with the engine disconnected (the temperature conditions may be different).

This hot performance shall not be less than 75 percent of that prescribed for M1 and 80 percent for M2, M3, N1, N2 and N3, or 60 percent of the figure recorded in the Type 0 test with the engine disconnected.

#### *Evaluation of the system*

The braking system performance is determined by measuring the stopping distance in relation to the initial vehicle speed and/or by measuring the average stabilized deceleration developed during testing.

- The stopping distance is the distance covered by the vehicle from the moment the driver begins to actuate the braking system until the moment when the vehicle stops. The initial speed is the speed at the moment when the driver begins to actuate the braking system; the initial speed shall not be less than 98 per cent of the prescribed speed for the test in question.
- The average stabilized deceleration ( $d_m$ ) shall be calculated as the average deceleration with respect to distance over the interval  $v_b$  to  $v_e$  according to the following formula:

$$\frac{v_b^2 - v_e^2}{2}$$

Where:  $d_m = 25.92 (s_e - s_b)$

$v_0$  = initial vehicle speed in km/h,

$v_b$  = vehicle speed in 0.8  $v_0$  in km/h,

$v_e$  = vehicle speed at 0.1  $v_0$  in km/h,

$s_b$  = distance travelled between  $v_0$  and  $v_b$  in metres,

$s_e$  = distance travelled between  $v_0$  and  $v_e$  in metres.

The speed and distance shall be determined using instrumentation whose accuracy must be  $\pm 1$  percent with respect to the prescribed speed for the test. The  $d_m$  may be determined by methods other than measuring the speed and distance; in that case, the accuracy of the  $d_m$  shall be  $\pm 3$  percent.

#### Automated emergency braking:

The main objective of this test is to check and ensure the correct operation of the automated emergency braking system.

To meet this objective, the vehicle must be able to avoid impact under various conditions and situations as explained below.

The test protocols TEST PROTOCOL – AEB SYSTEMS, VERSION 1.0, JULY 2013 and TEST PROTOCOL – AEB VRU SYSTEMS VERSION 1.0, FEBRUARY 2015 have been taken as reference.

The automated emergency braking performance shall be evaluated in the scenarios considered most representative by the reference protocols. Two main situations are evaluated: collisions and run over. Both situations shall be evaluated in different conditions:

- Collisions
  - Stationary vehicle
    - Vehicle test speed: 30, 50 and 70 km/h
  - Vehicle at lower speed
    - Vehicle test speed: 50 and 70 km/h
    - Opposing vehicle: 20 km/h
  - Braking vehicle
    - Both travelling at 50 km/h and at 12 m distance, vehicle brakes at  $-4 \text{ m/s}^2$
    - Both travelling at 50 km/h and at 40 m distance, vehicle brakes at  $-4 \text{ m/s}^2$
- Run over
  - Adult crossing from the right, the impact point at 50%
  - Child crossing from the right, the impact point at 50%.

The vehicle must avoid the impact in all scenarios.

### Lateral control:

The objective of these tests is to assess the vehicle's ability to stay in a lane marked with road markings (solid/broken line). Minimum lateral controllability of the vehicle is required, so as to ensure that in automated driving mode the vehicle is able to drive within its lane stably without interfering with the adjacent lanes.

To meet this objective, the vehicle must be able to stay in different conditions in a lane marked by road markings. It shall not be assessed whether the system is capable of operating in an open road without road markings.

Euro NCAP protocol for Lane Support Systems 2016 that applies to Lane Departure Warning and Lane Keeping Assistance shall be taken as reference for these tests.

Two scenarios shall be tested:

- Scenario 1 - lane departure, lane marked with road markings on one side only. In this scenario, the vehicle must be driven in manual mode in the lane indicated. With stable vehicle, a lane change shall start reaching a vehicle speed with respect to the line of between 0.1 and 0.8 m/s. When the vehicle is 0.5 m from the line, the driver shall leave the manual driving mode and enable automated driving mode to take control. The vehicle must prevent crossing the line.
- Scenario 2 - maintenance in the middle of the lane marked with road markings on both sides. In this scenario, the vehicle is driven in automated driving mode in the indicated lane. The vehicle must remain stable within the lane without oscillating.

For each scenario, the following combinations of passes shall be performed:

- Straight line and curve with radius  $R = 250$  m
- Travelling at 30, 50 and 80 km/h
- Lane departure left and right (only scenario 1).

Each pass (combination of tests) shall be repeated 3 times.

Road lane markings must be representative of the public roads where the tests are carried out.

It shall be considered that the automated driving system meets the lateral control criteria if:

- In all passes of scenario 1, the system prevents crossing the line. Line crossing is defined as when the inner edge of the line touches the outside edge of the front tyre closest to the line.
- In all passes of scenario 1, the automated driving system maintains the vehicle centre on the central axis of the lane in a range of  $\pm 0.25$  m for at least 3 seconds. Furthermore, it is required that the steering wheel speed during testing is always less than 15°/s.



## **Recognition and fulfilment with the traffic signs**

To ensure the testing of vehicles with automated capabilities on public roads and sharing the road with others it is essential to ensure that these vehicles in automated mode are able to recognize and respect both traffic signs and road markings either vertical or horizontal signs.

For this requirement two testing methods are considered:

- A closed test track with traffic signs and road markings.
- A test track using digital maps.

Only one of the two tests needs to be passed to meet this requirement, although a combination of the two can be performed.

To perform only the second test, the applicant must demonstrate that they have a digitized up-to-date map of the test area.

If the applicant can ensure the identification and compliance with road traffic signs and signals by means of a system other than the ones described, the Authorized Technical Service may develop a test methodology to ensure compliance with the traffic general regulations.

## Annex I: Simplified Technical Specifications

<b>M2 and M3 Categories</b>	
Make (*)	
Type (*)/ Variant / Version	
Trade Name (*)	
Vehicle category (*)	
Name and address of manufacturer of base vehicle	
Name and address of manufacturer of last phase of vehicle production:	
Location of manufacturer's plate (*)	
Fixed part of VIN (full VIN) (*)	
Vehicle identification number and location (*)	
<b>Base vehicle:</b>	
Type-approval number	
Date:	
<b>Complete/completed vehicle:</b>	
Type-approval number (including corresponding extension):	
Date:	
<b><u>GENERAL CONSTRUCTION CHARACTERISTICS OF THE</u></b>	
Number of axles and wheels (*)	
Number and position of axles with double wheels (*)	
Description of the axles. Type and capacity (*)	
Number and position of steered axles (*)	
Drive axles (number, position, interconnection) (*)	
<b><u>MASSES AND DIMENSIONS</u></b>	
Distance between consecutive axles 1st, 2nd, 3rd ... (*) (*)	
5th wheel lead (maximum and minimum in case of adjustable 5th	
Track of each axle 1st/2nd/3rd ... (*)	
Length (*)	
Width (*)	
Height (in running order) (*)	
Rear overhang (*)	
Mass of vehicle in running order	
Maximum technically permissible laden mass (MMTA)	
Distribution of this mass among the 1st/2nd/3rd axles coupling point if there is a trailer ...	
Maximum technically permissible laden mass on each axle 1st / 2nd / 3rd	
Technically permissible maximum mass of the combination (*)	
Intended registration/in-service maximum permissible laden mass (*)	
Intended registration/in-service maximum permissible laden mass on each axle 1st/2nd/3rd (*)	
Intended registration/in-service maximum permissible laden mass of the combination (*)	



Intended registration/in-service maximum permissible laden mass of the combination (*)	
Technically permissible maximum towable mass of the motor vehicle in case of:	
Drawbar trailer (*) (if available)	
Semitrailer (*) (if available)	
Centre-axle trailer (*) (if available)	
Maximum mass of the trailer without brakes (*) (if available)	
Static vertical load/technically permissible maximum mass on the coupling point of the motor vehicle (*) (if available)	
<b>DRIVE UNIT:</b>	
Engine manufacturer or make	
Code assigned by the engine manufacturer (in case of heavy vehicles, whether to include marking, identifying fuel) (*)	
<b>Internal combustion engine</b>	
Working principle (*)	
Number and arrangement of cylinders	
Displacement (*)	
Type of fuel or power source	
Maximum net power kW min-1 (*)	
<b>Pure electric Engine (yes/no)</b>	
Maximum power per hour (kW) (*)	
<b>Hybrid Engine (yes/no)</b>	
Type (*)	
<b>TRANSMISSION:</b>	
Type (mechanical, hydraulic, electric, etc.) (*)	
Gearbox (type) (*)	
No. of ratios (*)	



<b>M1 and N1 category derived</b>	
<b>Data</b>	
Make	
Type / Variant / Version	
Trade name	
Vehicle category	
Name and address of manufacturer of base vehicle:	
Name and address of manufacturer of last production stage of the vehicle	
Location of manufacturer's plate	
VIN fixed part	
Location of the vehicle identification number	
<b>Base vehicle:</b>	
Approval number (including corresponding extension):	
Date:	
<b>Complete/completed vehicle</b>	
Type-approval number (including corresponding extension)	
Date	
<b>GENERAL CONSTRUCTION CHARACTERISTICS OF</b>	
Number of axles and wheels	
Drive axles (number, position, interconnection):	
<b>MASSES AND DIMENSIONS</b>	
Distance between axles	
Tracks of axles	
Length	
Maximum permissible length of the completed vehicle	
Width	
Maximum permissible width of the completed vehicle	
Height	
Rear overhang	
Mass of vehicle in running order	
Minimum permissible mass of the completed vehicle	
Maximum technically permissible laden mass (MMTA)	
Intended registration/in-service maximum permissible laden mass X X	
Technically permissible maximum laden mass on each axle (MMTA 1st, 2nd ...) X X X	
Intended registration/in-service maximum permissible laden mass on each axle (1st, 2nd, ..)	
Technically permissible maximum mass of the combination:	
Intended registration/in-service maximum permissible laden mass of the combination	



Technically permissible maximum towable mass of the motor vehicle in case of:	
Drawbar trailer:	
Centre-axle trailer:	
Maximum mass of unbraked trailer:	
Technically permissible maximum static vertical load/mass on the vehicle's coupling point	
<b>DRIVE UNIT</b>	
Engine manufacturer or make	
Engine code assigned by the manufacturer	
<b>Internal combustion Engine</b>	
Working principle	
Number and arrangement of cylinders	
Displacement (cm <sup>3</sup> )	
Type of fuel or power source	
Maximum net power (kW) at (min)	
<b>Pure electric Engine (yes/no)</b>	
Maximum power per hour (kW)	
<b>Hybrid Engine (yes/no)</b>	
Type	
<b>TRANSMISSION</b>	
Type (Mechanical/Hydraulic/electric, etc.)	
Gearbox (type)	
No. of ratios	
<b>SUSPENSION</b>	
Brief description of the type of front and rear suspension	
Tyres and wheels (main characteristics)	
<b>STEERING</b>	
Steering, Type of power assistance.	
<b>BRAKING</b>	
Brief description of the braking system: ABS: yes/no	
<b>BODY</b>	
Body type (according to Annex II, part C of Directive 2007/46/EC)	
Devices for indirect vision other than rear-view mirrors	
Number and configuration of doors	
Number of seats (including the driver)	
EC type-approval number of the coupling device, if applicable	
Frontal Protection Systems: Yes/No. Detailed	
Device details	
<b>LIGHTING AND LIGHT-SIGNALLING DEVICES</b>	



Mandatory devices (Number)	
Optional devices (Number)	
MISCELLANEOUS	
Maximum speed	
Stationary noise level: dB(A) at min-1	
Emissions level Euro ....	
CO <sub>2</sub> emissions (combined cycle): g/km	
Fiscal Power	
Commentary	
Options included in the type-approval	
Authorized signature according to RFFR	

<b>L Category</b>	
Frame type	
Number of axles and wheels	
Driveshafts	
Distance between axles	
<b>MASSES AND DIMENSIONS (in mm and kg)</b>	
Front track	
Rear track	
Length	
Maximum permissible length of the completed vehicle	
Width	
Maximum permissible width of the completed vehicle	
Height	
Front/rear overhang	
Mass of vehicle with bodywork in running order	
Distribution of this mass between the axles	
Technically permissible maximum laden mass	
Technically permissible maximum laden mass 1st axle	
Technically permissible maximum laden mass 2nd axle	
Maximum towable mass: With brake / without brake (if applicable)	
<b>DRIVE UNIT</b>	
Engine manufacturer or make	
Code marked on the engine	
INTERNAL COMBUSTION ENGINE	
Working principle	
Number and arrangement of cylinders	
Displacement	
Type of fuel or power source	

Maximum net power (kW) at (min-1)	
Type of cooling	
Power supply system (Carburettor/injection)	
Max power/mass ratio of vehicle in running order	
<b>ELECTRIC MOTOR</b>	
Maximum continuous power (kW)	
<b>HYBRID ENGINE (YES/NO)</b>	
Type	
<b>TRANSMISSION</b>	
Clutch (type)	
Gearbox (type)	
No. of ratios	
Final ratio	
Gear ratio	
<b>SUSPENSION</b>	
Brief description of the type of front suspension	
Brief description of the type of rear suspension	
Designation of tyre size axle 1 (indicating load and minimum speed specifications)	
Designation of tyre size axle 2 (indicating load and minimum speed specifications)	
Tyre approval regulations	
<b>STEERING</b>	
Steering	
<b>BRAKING</b>	
Brief description of the service brake device (front/rear/combined)	
Braking devices located on the front axle	
Braking devices located on the rear axle	
Parking braking device	
ABS: Yes/No	
<b>BODY</b>	
Type of body	
Number and configuration of doors	
Number and position of seats	
Number of places	
EC approval mark of coupling device, if applicable	
Types or classes of coupling devices which can be installed	
Characteristic values: D / S	
Stationary noise level: dB(A) at min-1	
Reference silencers	
Make	



Reference	
Catalytic converter	
Value of CO (g/min) on mopeds, (% volume) other categories	
Corrected value of absorption coefficient: min-1(For compression ignition).	
CO <sub>2</sub> emissions (Combined) (if any)	
Fiscal Power	
Commentary	
Options included in the type-approval	
Authorized signature according to RFFR	

## Annex II: Technical specifications sheet

A.1	Name of the manufacturer of the base vehicle
A.2	Address of the manufacturer of the base vehicle
B.1	Name of the manufacturer of the completed vehicle
B.2	Address of the manufacturer of the completed vehicle
C.I	Periodic roadworthiness inspection code
C.L	Vehicle classification
C.V	VIN Control
D.1	Make
D.2	Type / Variant / Version
D.3	Trade name of the vehicle
D.6	Origin
E	Vehicle Identification Number
EP	Protective structure
EP.1	Make of the protection structure
EP.2	Model of the protection structure
EP.3	Type-approval no. of the protection structure
EP.4	Identification no. of the protection structure
F.1	Maximum technically permissible laden mass
F.1.1	Maximum technically permissible laden mass on each axle 1st / 2nd / 3rd
F.1.5	Maximum technically permissible laden mass on 5th wheel or kingpin
F.2	Maximum permissible laden mass of the in-service vehicle
F.2.1	Maximum authorized mass on each axle 1st / 2nd / 3rd
F.3	Maximum technically permissible mass of the combination
F.3.1	Maximum authorized mass
F.4	Overall height
F.5	Overall width
F.5.1	Maximum body width
F.6	Total length
F.6.1	Maximum body length
F.7	Front track
F.7.1	Rear track
F.8	Rear overhang
F.8.1	Maximum rear body overhang
G	Mass in running order
G.1	Unladen mass for category L vehicles

G.2	Minimum permissible mass of the completed vehicle
J	Vehicle category
J.1	Vehicle body
J.2	Class
J.3	Volume of baggage hold
K	Type-approval no. of the base vehicle
K.1	Type-approval no. of the completed vehicle
K.2	TITV certificate no. of base vehicle
L	Number of axles and wheels
L.0	Number and position of axles with twin wheels
L.1	Driveshafts
L.2	Tyre sizes
M.1	Wheelbase 1st-2nd, 2nd-3rd
M.4	Distance between 5th wheel or kingpin and rearmost axle
O.1	Braked towable mass/Technically permissible towable mass of the motor vehicle in case of:
O.1.1	Drawbar
O.1.2	Semitrailer
O.1.3	Trailer centre axle
O.1.4	Trailer without brakes
O.2.1	Maximum technically permissible towable mass with mechanical brakes
O.2.2	Maximum technically permissible towable mass with inertia brakes
O.2.3	Maximum technically permissible towable mass with hydraulic or pneumatic brakes
O.3	Type of service brake
P.1	Displacement
P.1.1	Number and arrangement of cylinders
P.2	Engine power
P.2.1	Fiscal power
P.3	Type of fuel or power source
P.5	Engine identification code
P.5.1	Engine manufacturer or make
Q	Power / mass ratio
R	Colour
S.1	No. of seating places / number of seats or saddles
S.1.2	Seat belts
S.2	Number of standing places
T	Maximum speed
U.1	Stationary noise level



U.2	Engine speed at which the sound level or stationary vehicle is measured
V.7	CO <sub>2</sub> emissions
V.8	CO emissions
V.9	Emissions level
Z	Year and number of the short series

## Annex III: Safety Check Passenger Cars

VEHICLE SAFETY CHECKS - PASSENGER CARS						
STATIC SAFETY CHECK						
SAMPLE CODE:		VIN:				
MANUFACTURER:	MODEL:	REGISTRATION NUMBER:				
ELECTRIC OR HYBRID VEHICLE?:	TYPE OF FUEL:	TOTAL MILEAGE:				
PLACE:		DATE AND TIME:				
NAME AND SURNAME OF CHECKER:		SIGNATURE:				
ELEMENTS TO BE CHECKED:	REMARKS	OK	DK / DA	N/A	ACTION TAKEN / COMMENTS	OK AFTER
<b>EXTERIOR</b>						
Windscreen and other windows	Visibility and absence of cracks in viewing area					
Rear-view mirrors	Cleaning, no cracks and adjustment possible					
Wiper blades	Condition					
Lighting and signalling devices: Full-beam, dipped-beam, position, brake, turn signals, reversing light, fog light	Condition of exterior and correct operation					
Opening and closing of doors	Correct operation					
Fuel cap/flap	Condition, correct closing					
Camouflage	Attachment, visibility, enabling lighting and signalling and opening and closing of doors					
Exterior protrusions	Check by visual inspection the absence of protrusions or compromised areas. (If in doubt, gauges may be used or a ball of 100 mm in diameter to ensure that these protrusions do not pose any risk to people or other vehicles).					
<b>MASSES AND DIMENSIONS (in mm and kg)</b>						
Length	Verify that the values are as specified by the manufacturer					
Height	Verify that the values are as specified by the manufacturer					
Width	Verify that the values are as specified by the manufacturer					
Distance between axles	Verify that the values are as specified by the manufacturer					
Wheel track	Verify that the values are as specified by the manufacturer					
Mass of vehicle in running order	Verify that the values are as specified by the manufacturer					
Technically permissible maximum laden mass on each axle (MMTA 1st, 2nd ...)	Verify that the values are as specified by the manufacturer					



ENGINE COMPARTMENT						
Engine oil	[Min 1/4 1/2 3/4 Max ]					
Coolant	[Min 1/4 1/2 3/4 Max ]					
Brake fluid	[Min 1/4 1/2 3/4 Max ]					
Clutch fluid/clutch cable	[Min 1/4 1/2 3/4 Max ]					
Automatic transmission fluid	[Min 1/4 1/2 3/4 Max ]					
Power steering fluid	[Min 1/4 1/2 3/4 Max ]					
Windscreen wiper fluid	[Min 1/4 1/2 3/4 Max ]					
SCR fluid (urea system)	[Min 1/4 1/2 3/4 Max ]					
Low-voltage battery	Attachment of battery, cables, and no acid residues					
General inspection	No leaks, damage/cracks, deformations, loose parts ... in mechanical parts, pipes and wiring					
Fuel	[Min 1/4 1/2 3/4 Max ]					
INTERIOR						
Condition of ABS and ESP	Check that ABS or ESP are not inactive, failed or unknown.					
Condition of airbags	Check that driver and occupant airbags are not inactive, disabled or unknown					
Other tell-tales or indicators	Check they do not show failure					
Guides, anchorages, seats, headrests and seatbelts	Condition, attachment and possibility of adjustment (in all seats)					
Substitute seat belts or 3/4-point safety harness/harnesses (if fitted)	Check condition, proper installation, fastening and possibility of adjustment: * Driver:					
Interior roll bars	Check condition and attachment					
Horn	Operation					
Windshield wipers	Operation and surface wiped					
Interior rear-view mirror	Attachment and possibility of adjustment					
Accelerator pedal	Condition, attachment, play, travel, return and stiffness					
Service brake pedal	Condition including pedal rubbers, attachment, play, travel, return and stiffness					
Clutch pedal	Condition, attachment, play, travel, return and stiffness					
Gear lever	Condition, attachment, play, travel and stiffness					
Lever, parking brake pedal or electric parking brake	Condition, attachment, play, travel and stiffness Correct operation of electric brake if fitted.					
Steering wheel and steering linkages	Condition, attachment, play, travel and stiffness					
Driving position	Verify that the controls are accessible and functional					
Opening and closing of doors	Operation					
Emergency exits	Check that once the vehicle is instrumented and installed, there is enough space in each row of seats to exit in case of emergency					





TYRES AND WHEEL ARCH (without dismounting wheels)						
Tyre condition	No cracks, punctures, leaks or ageing. Even wear.					
Tyre tread depth (mm)	Tread depth $\geq$ 1.6mm FL:                      FR:					
Unladen tyre pressure	FL:                      FR:					
DOT tyres	RL:                      RR: FL:                      FR:					
Wheel tightening torques	120 Nm for passenger cars, if not specified.					
Wheel bearing	No excessive play in bearing bushing					
Suspension	Attachment, no free play, no leaks in shock absorber					
Brake circuit pipes	Condition, attachment, no cracks or leaks					
ABS sensor wiring	Condition, attachment					
Discs and pads	Visual inspection of wear condition and absence of cracks					
<b>VEHICLE UNDERSIDE</b>						
Mudguard	Condition and attachment					
Suspension system	Attachment and condition of components and connections (no cracks or other damage)					
Exhaust line	Condition and attachment					
Hydraulic brake circuit	Condition, attachment, no cracks, rubbing or leaks					
Fuel system	Condition, attachment, no cracks, rubbing or leaks					
Engine and transmission line	Condition, attachment, no cracks, rubbing or leaks	OK	NO OK	NOT CHECKED		
Undercover	Condition and attachment					
		DATE AND TIME:				
<b>OTHERS, if installed when checked:</b>		SIGNATURE:				
Ballast:	Condition, attachment, position					
Measuring equipment, display screens or auxiliary batteries	Condition, attachment, position					
		DATE AND TIME:				
<b>VALIDATOR'S VERDICT regarding STATIC CHECK</b>		STATIC CHECK PERFORMED AND VALIDATED?				
<b>VEHICLE OK TO DO DYNAMIC CHECK?</b>	Based on the information provided by the checker, it shall be determined whether the vehicle is able to perform the dynamic check. If anything is not clear enough, it shall be checked individually.	SIGNATURE:				
PLACE:						
NAME AND SURNAME OF VALIDATOR:		OK	N/A	DK / DA	ACTION TAKEN / COMMENTS	



# Commercial vehicle

VEHICLE SAFETY CHECKS - TRUCK, BUS, COACH						
STATIC SAFETY CHECK						
SAMPLE CODE:		VIN:				
MANUFACTURER:	MODEL:	REGISTRATION NUMBER:				
ELECTRIC OR HYBRID VEHICLE?:	TYPE OF FUEL:	TOTAL MILEAGE:				
PLACE:		DATE AND TIME:				
NAME AND SURNAME OF CHECKER:		SIGNATURE:				
ELEMENTS TO BE CHECKED:	REMARKS	OK	DK / DA	N/A	ACTION TAKEN / COMMENTS	OK AFTER MODIFICATION
<b>EXTERIOR</b>						
Windscreen and other windows	Visibility and absence of cracks in viewing area					
Rear-view mirrors	Cleaning, no cracks and adjustment possible					
Wiper blades	Condition					
Lighting and signalling devices: Full-beam, dipped-beam, position, gauge, brake, turn signals, reversing light, fog light	Condition of exterior, correct operation					
Opening and closing of doors	Correct operation					
Fuel cap/flap	Condition, correct closing					
Camouflage	Attachment, visibility, enabling lighting and signalling and opening and closing of doors					
Exterior protrusions	Check by visual inspection the absence of protrusions or compromised areas. (If in doubt, gauges may be used or a ball of 100 mm in diameter to ensure that these protrusions do not pose any risk to people or other vehicles).					
<b>MASSES AND DIMENSIONS (in mm and kg)</b>						
Length	Verify that the values are as specified by the manufacturer					
Height	Verify that the values are as specified by the manufacturer					
Width	Verify that the values are as specified by the manufacturer					
Distance between axles	Verify that the values are as specified by the manufacturer					
Track of each axle 1st/2nd/3rd ...	Verify that the values are as specified by the manufacturer					
Mass of vehicle in running order	Verify that the values are as specified by the manufacturer					
Maximum technically permissible laden mass (MMTA)	Verify that the values are as specified by the manufacturer					

ENGINE COMPARTMENT						
Engine oil	[Min 1/4 1/2 3/4 Max ]					
Coolant	[Min 1/4 1/2 3/4 Max ]					
Brake fluid	[Min 1/4 1/2 3/4 Max ]					
Clutch fluid/clutch cable	[Min 1/4 1/2 3/4 Max ] 3/4 Max ]					
Automatic transmission fluid	[Min 1/4 1/2 3/4 Max ]					
Power steering fluid	[Min 1/4 1/2 3/4 Max ]					
Windscreen wiper fluid	[Min 1/4 1/2 3/4 Max ]					
SCR fluid (urea system)	[Min 1/4 1/2 3/4 Max ]					
Low-voltage battery	Attachment of battery, cables, and no acid residues					
General inspection	No leaks, damage/cracks, deformations, loose parts ... in mechanical parts, pipes and wiring					
Fuel	[Min 1/4 1/2 3/4 Max ]					
<b>INTERIOR</b>						
Condition of ABS and ESP	Check that ABS or ESP are not inactive, failed or unknown.					
Condition of airbags	Check that driver and occupant airbags are not inactive, disabled or unknown					
Other tell-tales or indicators	Check they do not show failure					
Guides, anchorages, seats, headrests and seat belts	Condition, attachment and possibility of adjustment (in all seats)					
Substitute seat belts (if fitted)	Check condition, proper installation, fastening and possibility of adjustment: * Driver:					
Interior roll bars	Check condition and attachment					
Horn	Operation					
Windshield wipers	Operation and surface wiped					
Interior rear-view mirror	Attachment and possibility of adjustment					
Accelerator pedal	Condition, attachment, play, travel, return and stiffness					
Service brake pedal	Condition including pedal rubbers, fastening, play, travel, return and stiffness					
Clutch pedal	Condition, attachment, play, travel, return and stiffness					
Gear lever	Condition, attachment, play, travel and stiffness					
Lever, parking brake pedal or electric parking brake	Condition, attachment, play, travel and stiffness Correct operation of electric or pneumatic brake if fitted.					
Steering wheel and steering linkages	Condition, attachment, play, travel and stiffness					
Driving position	Verify that the controls are accessible and functional					
Opening and closing of doors	Operation					
Emergency exits	Check that the vehicle is instrumented and installed, there is enough space in each row of seats to exit in case of emergency					



TYRES AND WHEEL ARCH (without dismantling wheels)						
Tyre condition	No cracks, punctures, leaks or ageing. Even wear.					
Tyre tread depth (mm)	Tread depth $\geq$ 1,6mm FL1 :                      FR1 :					
Unladen tyre pressure DOT tyres						
Wheel tightening torques	Check by specifications of manufacturer or supervisor's instructions. Mark the screws/nuts or place parts in "S"					
Suspension	Visual inspection of wear condition and absence of cracks					
Brake circuit pipes	Visual inspection of wear condition and absence of cracks					
ABS sensor wiring	Visual inspection of wear condition and absence of cracks					
Discs and pads	Visual inspection of wear condition and absence of cracks					
<b>VEHICLE UNDERSIDE</b>						
Mudguard	Condition and attachment					
Suspension system	Visual inspection of wear condition (absence of cracks or other damage)					
Exhaust line	Visual inspection of wear condition					
Brake circuit	Visual inspection of wear condition and absence of cracks					
Fuel system	Condition, attachment, no cracks, rubbing or leaks	OK	NO OK	NOT CHECKED		
Engine and transmission line	Condition, attachment, no cracks, rubbing or leaks					
Undercover	Condition and attachment	DATE AND TIME:				
		SIGNATURE:				
<b>OTHERS, if installed when checked:</b>						
Ballast:	Condition, attachment, position					
Measuring equipment, display screens or auxiliary batteries	Condition, attachment, position					
DATE AND TIME:						
STATIC CHECK PERFORMED AND VALIDATED?						
<b>VALIDATOR'S VERDICT regarding STATIC CHECK</b>		SIGNATURE:				
<b>VEHICLE OK TO DO DYNAMIC CHECK?</b>	Based on the information provided by the checker, it shall be determined whether the vehicle is able to perform the dynamic check. If anything is not clear enough, it shall be checked individually.					
PLACE:		OK	N/A	DK / DA	ACTION TAKEN / COMMENTS	
NAME AND SURNAME OF VALIDATOR:						



# Motorcycles

VEHICLE SAFETY CHECKS - MOTORCYCLES						
STATIC SAFETY CHECK						
SAMPLE CODE:		VIN:				
MANUFACTURER:	MODEL:	REGISTRATION NUMBER:				
ELECTRIC OR HYBRID VEHICLE?:	TYPE OF FUEL:	TOTAL MILEAGE:				
PLACE:		DATE AND TIME:				
NAME AND SURNAME OF CHECKER:		SIGNATURE:				
ELEMENTS TO BE CHECKED:	REMARKS	OK	DK / DA	N/A	ACTION TAKEN / COMMENTS	OK AFTER MODIFICATION
<b>EXTERIOR</b>						
Rear-view mirrors	Cleaning, no cracks and adjustment possible					
Lighting and signalling devices: Dipped, full, position, brake, flashing	Condition of exterior and correct operation					
Fuel cap	Condition, correct closing					
General inspection	No leaks, damage/cracks, deformations, loose parts ... in mechanical parts, pipes and wiring					
Ground clearance	Check that there are no elements that may contact with the ground when tilting the motorcycle					
Mudguard	Condition and attachment					
Passenger and rider footrest	Condition and attachment					
Passenger grip handle	Condition and attachment					
Camouflage	Fastening, visibility, allowing lighting and signalling					
Crankcase protector	Condition and attachment					
Passenger and rider seat	Condition and attachment					
Exterior protrusions	Check by visual inspection the absence of protrusions or compromised areas. (If in doubt, gauges may be used or a ball of 100 mm in diameter to ensure that these protrusions do not pose any risk to people or other vehicles).					
Driving position	Verify that the controls are accessible and functional					
Emergency exits	Check that once the vehicle is instrumented and installed, there is enough space in each row of seats to exit in case of emergency					
<b>MASSES AND DIMENSIONS (in mm and kg)</b>						
Length	Verify that the values are as specified by the manufacturer					
Height	Verify that the values are as specified by the manufacturer					
Width	Verify that the values are as specified by the manufacturer					
Wheelbase	Verify that the values are as specified by the manufacturer					
Mass of vehicle with bodywork in running order	Verify that the values are as specified by the manufacturer					
Technically permissible maximum laden mass on each axle (MMTA 1st, 2nd ...)	Verify that the values are as specified by the manufacturer					



ENGINE/TRANSMISSION					
Engine oil	[Min 1/4 1/2 3/4 Max ]				
Coolant	[Min 1/4 1/2 3/4 Max ]				
Brake fluid	[Min 1/4 1/2 3/4 Max ]				
Clutch fluid/clutch cable	[Min 1/4 1/2 3/4 Max ]				
Low-voltage battery	Attachment of battery, cables, and no acid residues				
Fuel	[Min 1/4 1/2 3/4 Max ]				
Fuel system	Condition, attachment, no cracks, rubbing or leaks				
Exhaust line	Condition and attachment				
Chain or driveshaft	Condition, attachment, no cracks, rubbing or leaks				
CONTROLS AND TELL-TALES					
Condition of ABS and ESP	Check that ABS or ESP are not inactive, failed or unknown.				
Other tell-tales or indicators	Check they do not show failure				
Horn	Operation				
Throttle grip	Condition, attachment, play, travel, return and stiffness				
Pedal and/or brake levers	Condition including pedal rubbers, attachment, play, travel, return and stiffness				
Clutch lever	Condition, attachment, play, travel, return and stiffness				
Gear lever	Condition, attachment, play, travel and stiffness				
Handlebars	Condition, attachment, free play throughout its range of rotation without incidents in throttle or clutch				
WHEELS AND MUDGUARDS					
Condition of tyres	No cracks, punctures, leaks or ageing. Even wear.				
Tyre tread depth (mm)	Tread depth $\geq$ 1,6mm F: R:				
Cold tyre pressures	F: R:				
Wheel bearing	No excessive play in bearing bushing				
Tightening torques in axle	Check tightening and lack of free play. Mark nuts or bolts.				
Discs / drums and calipers	Check through the application of forces the absence of abnormal noises or play				
Brake circuit hoses	Condition, attachment, no cracks or leaks				
ABS sensor wiring	Condition, attachment				
Discs and pads	Visual inspection of wear condition and absence of cracks				
Fork and shock absorber	Fastening, no free play, no leaks in shock absorbers and fork				



<b>OTHERS, if installed when checked:</b>					
Ballast	Condition, attachment, position				
Outriggers	Check condition, attachment and no dangerous protrusions				
Measuring equipment, display screens or auxiliary batteries	Condition, attachment, position				
<b>VALIDATOR'S VERDICT regarding STATIC CHECK</b>		<b>OK</b>	<b>NO OK</b>	<b>NOT CHECKED</b>	
<b>VEHICLE OK TO DO DYNAMIC CHECK?</b>	Based on the information provided by the checker, it shall be determined whether the vehicle is able to perform the dynamic check. If anything is not clear enough, it shall be checked individually.				
PLACE:	DATE AND TIME:				
NAME AND SURNAME OF VALIDATOR:	SIGNATURE:				

## Annex IV: Scenarios and functionalities checklist

HOJA de CHEQUEOS DE SEGURIDAD DEL VEHICULO		
ESCENARIOS Y FUNCIONALIDADES		
CÓDIGO DE MUESTRA:	MODELO:	VIN:
SOLICITANTE:	MATRICULA:	
Situación de tráfico: (marcar todas las que apliquen)	Urbana <input type="checkbox"/> Interurbana <input type="checkbox"/> Via rápida <input type="checkbox"/>	
Tipo de vía: (marcar todas las que apliquen)	Zona urbana <input type="checkbox"/> Zona peatonal <input type="checkbox"/> Carretera secundaria con circulación en doble sentido sin separación de carriles <input type="checkbox"/> Carretera secundaria con circulación en doble sentido con separación de carriles <input type="checkbox"/> Carretera nacional, 1 carril de circulación <input type="checkbox"/> Carretera nacional, múltiples carriles de circulación <input type="checkbox"/> Autovía <input type="checkbox"/> Autopista <input type="checkbox"/>	
Vías identificadas que cumplen estas condiciones:		
Condiciones de tráfico: (marcar todas las que apliquen)	Intensidad de tráfico requerida:	Muy alta <input type="checkbox"/> Alta <input type="checkbox"/> Media <input type="checkbox"/> Baja <input type="checkbox"/> Muy baja <input type="checkbox"/>
	Vehículos / usuarios propios del ensayo que intervendrán en el ensayo:	Turismos <input type="checkbox"/> Camiones ligeros <input type="checkbox"/> Camiones pesados <input type="checkbox"/> Motocicletas <input type="checkbox"/> Bicicletas <input type="checkbox"/> Otros <input type="checkbox"/> Especificar: <input type="text"/>
	Vehículos / usuarios ajenos al ensayo que pueden intervenir en el ensayo:	Turismos <input type="checkbox"/> Camiones ligeros <input type="checkbox"/> Camiones pesados <input type="checkbox"/> Motocicletas <input type="checkbox"/> Bicicletas <input type="checkbox"/> Otros <input type="checkbox"/> Especificar: <input type="text"/>
Condiciones de ensayo (marcar todas las que apliquen)	Condiciones de luz:	Día <input type="checkbox"/> Noche <input type="checkbox"/> Amanecer/atardecer <input type="checkbox"/>
	Condiciones climatológicas	Soleado <input type="checkbox"/> Lluvia ligera <input type="checkbox"/> Lluvia intensa <input type="checkbox"/> Nieve <input type="checkbox"/> Nublado <input type="checkbox"/> Niebla <input type="checkbox"/>
Maniobras a realizar (marcar todas las que apliquen)	Tipo de maniobra:	Adelantamiento <input type="checkbox"/> Intersección <input type="checkbox"/> Otras <input type="checkbox"/> Especificar: <input type="text"/>
	Condiciones límite esperadas	Velocidad máxima <input type="text"/> km/h Deceleración longitudinal máxima <input type="text"/> g Aceleración lateral máxima <input type="text"/> g





# Annex V: Dynamic check template

<b>STATIC SAFETY CHECK</b>					
PLACE:					
DRIVER TRAINING LEVEL (AT LEAST C2)					
NAME AND SURNAME OF DRIVER CHECKER:					
<p>It is mandatory to do the checks following the defined order (guidance picture)</p> <p>Manoeuvring speeds are reduced according to the characteristics and legal limits of the vehicle</p>					
<b>CONCEPT</b>	<b>REMARKS</b>				
1. Speedometer	Operation				
2. Straight line driving up to 50 km/h	No deviation, vibration, noise or other anomalies				
3. Bend exit up to 30 km/h	Correct self-return of the steering wheel and no vibration, noise or other anomalies				
4. Swerving within lane with starting speeds up to 30 km/h	Stability, control and no vibration, noise or other anomalies	OK	NO OK	NOT CHECKED	<b>REMINDER:</b> * Mandatory to have reflective vest to drive on tracks * Mandatory to have reflective vest and warning triangles for driving on public roads
5. Braking up to 0.5 g with starting speeds of up to 50 km/h	No deviation, vibration, noise or other anomalies				
6. Brake to lock or activation of ABS with initial speeds of up to 50 km/h	No deviation, vibration, noise or other anomalies In addition:	DATE AND TIME:			
7. 3/4 throttle acceleration up to 60 km/h	No deviation, vibration, noise or other anomalies	SIGNATURE:			
8. Straight line driving up to 90 km/h	No deviation, vibration, noise or other anomalies				
9. Activation of retarder systems (if applicable)	Check function and no anomalies				
10. General evaluation (up to 90 km/h)	No abnormal operation of engine, gearbox or clutch during normal driving less than 120 km/h				
<b>VALIDATOR'S VERDICT regarding STATIC AND DYNAMIC CHECKS</b>					
VEHICLE OK FOR USE?	Based on the information provided by the verifiers from STATIC AND DYNAMIC checking, determine if the vehicle is fit for use. If anything is not clear enough, it shall be checked individually.				
PLACE:					
NAME AND SURNAME OF VALIDATOR:					