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COMMISSION IMPLEMENTING REGULATION (EU) 2026/481

of 3 March 2026

amending Implementing Regulation (EU) 2022/1426 laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of the automated driving system of fully automated vehicles

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/858 of the European Parliament and of the Council and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009 of the European Parliament and of the Council and Commission Regulations (EC) No 631/2009, (EU) No 406/2010, (EU) No 672/2010, (EU) No 1003/2010, (EU) No 1005/2010, (EU) No 1008/2010, (EU) No 1009/2010, (EU) No 19/2011, (EU) No 109/2011, (EU) No 458/2011, (EU) No 65/2012, (EU) No 130/2012, (EU) No 347/2012, (EU) No 351/2012, (EU) No 1230/2012 and (EU) 2015/166 ([1]), and in particular Article 11(2) thereof,

Whereas:

(1) The Union type-approval legislation allows since 2022 the market introduction of driverless vehicles for specific use cases, by means of a small series scheme, allowing exemptions from certain type-approval regulations for fully automated vehicles. The derogations under this small series scheme apply under the condition that the number of registrations of a vehicle type in the Union per year does not exceed 1 500 registrations.

(2) Substantial technological and regulatory developments have taken place since 2022 making the large-scale deployment of fully automated vehicles possible. Solutions for automated valet parking (AVP) large-scale production and deployment are already available and the adoption of requirements for steering and braking of dual-mode vehicles in the UNECE, in particular UN Regulations No 79 ([2]) and No 13/13-H ([3]) respectively, allows for compliance of AVP systems with the EU whole vehicle type-approval framework. Therefore, it has become possible and appropriate to lift the small series limitation starting with the ('AVP') use case.

(3) However, before allowing the whole-vehicle type-approval of vehicles equipped with AVP systems in unlimited numbers, it is necessary to lay down additional technical requirements on the safety performance and the safety validation through selected scenarios, given the specificities of the AVP use case, i.e. operation in parking areas at very low speed.

(4) Extension of scope of the existing Union legislation beyond dual mode vehicles and its alignment with the evolving United Nations Economic Commission for Europe (UNECE) framework, necessary to enable harmonised interpretation and application at international level, require adaptation of several definitions included in this legislation.

([1]) OJ L 325, 16.12.2019, p. 1, ELI: http://data.europa.eu/eli/reg/2019/2144/oj.
([2]) UN Regulation No 79 – Uniform provisions concerning the approval of vehicles with regard to steering equipment [2025/3] (OJ L 2025/3, 10.1.2025, ELI: http://data.europa.eu/eli/reg/2025/3/oj).
([3]) UN Regulation No 13-H – Uniform provisions concerning the approval of passenger cars with regard to braking [2023/401] (OJ L 60, 24.2.2023, p. 1, ELI: http://data.europa.eu/eli/reg/2023/401/oj).

(5) Commission Implementing Regulation (EU) 2022/1426 ([4]) should therefore be amended accordingly.

(6) The measures provided for in this Regulation are in accordance with the opinion of the Technical Committee – Motor Vehicles (TCMV),

HAS ADOPTED THIS REGULATION:

Article 1

Implementing Regulation (EU) 2022/1426 is amended as follows:

(1) in Article 1, first subparagraph, point (c) is replaced by the following:

'(c) 'Automated valet parking' ('AVP'): vehicles with an automated driving system ('ADS') feature for parking applications within an operational design domain ('ODD'). The system may use or not external infrastructure (including, where relevant, localization markers and perception sensors) to perform the dynamic driving task.';

(2) Article 2 is amended as follows:

(1) point 2 is replaced by the following:

'2. 'ADS feature' means an application of an ADS designed specifically for use within an ODD.';

(2) point 5 is replaced by the following:

'5. 'operational function' means a capability to control the real-time motion of the vehicle, which involves executing micro-changes in steering, braking, and accelerating to maintain lane position or proper vehicle separation and immediate responsive actions to avoid crashes in critical driving situations.';

(3) point 6 is replaced by the following:

'6. 'tactical function' means a capability to perceive the vehicle environment and control real-time planning, decision, and execution of manoeuvres, including conspicuity of the vehicle and its motion and which includes deciding whether to overtake a vehicle or change lanes, signalling intended manoeuvres, deciding when to initiate the manoeuvre, choosing the proper speed, and executing the manoeuvre.';

(3) in Article 3, paragraph 2 is replaced by the following:

'2. The type-approval of the ADS of fully automated vehicles shall be subject to the technical specifications set out in Annex II. Those specifications shall be assessed by the approval authorities or their technical services in accordance with Annex III.

In addition to the requirements set out in the first subparagraph, the type approval of the AVP features of ADS shall be subject to the technical specifications set out in Annex V. Those specifications shall be assessed by the approval authorities or their technical services in accordance with Annex V.';

(4) Annex III is amended in accordance with Annex I to this Regulation;

(5) the text in Annex II to this Regulation is added as Annex V.

([4]) Commission Implementing Regulation (EU) 2022/1426 of 5 August 2022 laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of the automated driving system (ADS) of fully automated vehicles (OJ L 221, 26.8.2022, p. 1, ELI: http://data.europa.eu/eli/reg_impl/2022/1426/oj).

Article 2

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 3 March 2026.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX I

Annex III to Implementing Regulation EU 2022/1426 is amended as follows:

(1) in Part 1, point 1.3.3., Figure 1 is replaced by the following:

‘

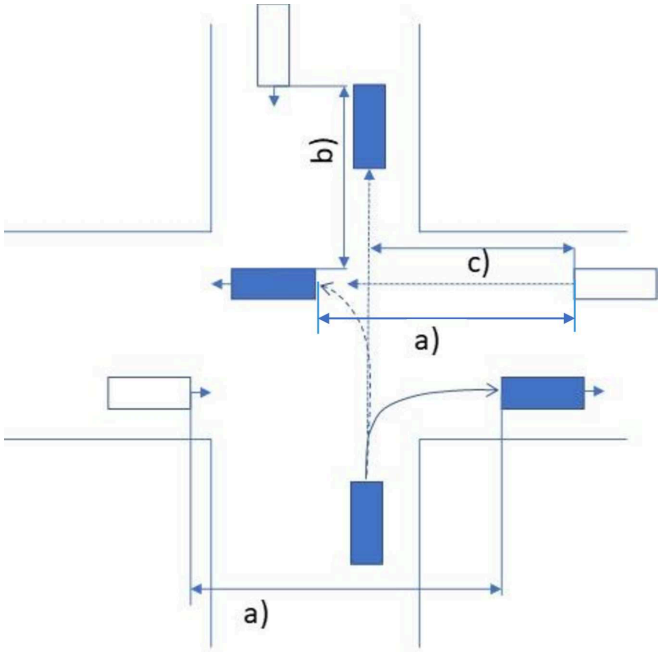


Figure 1: Visualisation of the distances during turning and crossings.’;

(2) in Part 2, point 5.7. is replaced by the following:

‘5.7. The manufacturer shall ensure that the organisation safety management system complies with the requirements of points 5.1. (except for vehicle related aspects like ‘operation’ and ‘decommissioning’), 5.2, 5.3 and 5.6 by means of arrangements with any organization involved in the development, manufacturing, or in-use deployment of its ADS and its features (including, where relevant, contracted suppliers, service providers, or manufacturers’ sub-organizations). Such arrangements may include, where appropriate, contractual arrangements, clear interfaces or a quality management system.’.

ANNEX II

The following text is added as Annex V to Implementing Regulation (EU) 2022/1426:

'ANNEX V

Technical specifications for AVP as referred to in Article 3(2)

PART 1: DEFINITIONS

1. **Definitions**

For the purposes of this Annex, the following definitions apply:

1.1. 'AVP trip' means the verification of all safety-related conditions in the AVP feature for AVP activation, the subsequent execution of the DDT and the AVP deactivation.

1.2. 'Transition location' means a designated area located within the ODD, which is appropriate to activate or deactivate the AVP feature.

1.3. 'Smallest relevant object' means the smallest vulnerable road user that the AVP feature is able to detect and react to while carrying out the DDT.

1.4. 'Safety distance' means the distance of an object to which the AVP feature shall react by an appropriate way, whereby the reaction to front, side or rear objects may vary based on their distance.

1.5. 'Permanent object' means an unmoveable object within the ODD.

1.6. 'Static object' means a moveable object within the ODD, which does not move in the relevant period.

1.7. 'Dynamic object' means an object within the ODD which is moving in longitudinal and transverse traffic and which may in particular be a vulnerable road user or another manually driven or fully automated vehicle.

PART 2: PERFORMANCE REQUIREMENTS

2. **General requirements**

2.1. The AVP feature shall be capable of performing the DDT as specified for and within the limits of its restricted ODD.

2.2. The AVP feature shall be designed to avoid any negative effect on safety and traffic flow of the ODD during operation.

2.3. The maximum speed of the vehicle with the AVP feature being active shall not be higher than 30 km/h and it shall be specified by the manufacturer based on the ODD particularities (including available speed limits and narrowness of the parking area).

2.6. The manufacturer remains the sole responsible for the compliance with the requirements of this Annex irrespective of any third parties involved in the in-use deployment or operation of the AVP feature.

2.7. Where the AVP feature relies on the vehicle-external information, availability, compatibility and security of such information shall be ensured during the AVP feature operation.

2.8. If the vehicle is equipped with other ADS features, safe interaction between the AVP feature and other ADS features shall be ensured.

2.9. In case vehicle occupants are allowed whilst the AVP feature is active, in accordance with the ODD description of the AVP feature, appropriate measures shall be taken against foreseeable misuse by the vehicle occupants.

2.10. In case vehicle occupants are not allowed whilst the AVP feature is active, in accordance with the ODD description of the AVP feature, the AVP feature shall be designed to ensure that the AVP feature can only operate when no person or animal is located inside the vehicle.

2.11. The steering equipment of the dual mode vehicle equipped with an AVP feature shall comply with UN Regulation No 79 (*) 04 or later series of amendments.

The braking system of the dual mode vehicle equipped with an AVP feature shall comply with UN Regulation No 13 (**), 13 or later series of amendments, or UN Regulation No 13H (***), 01 or later series of amendments, as applicable.

3. **Requirements for AVP feature activation and deactivation**

3.1. AVP feature activation and deactivation under nominal scenarios shall be possible only in transition locations or parking spaces.

3.2. All conditions for AVP feature activation and deactivation shall be verified against the conditions of the defined ODD (including, where relevant, presence or absence of vehicle occupants, parking space or transition location appropriate for entering or exiting the vehicle).

3.3. AVP feature deactivation

3.3.1. After the AVP feature has successfully completed the AVP trip by either reaching a transition location or a parking space within the ODD, the AVP feature shall automatically bring the vehicle to a halt, keep it stationary and deactivate the AVP feature.

3.3.2. The AVP feature shall remain active until the system or user initiated deactivation process has been completed or the vehicle reaches a MRC.

3.3.3. If applicable upon AVP feature deactivation, the vehicle controls, indicators, warnings, and tell-tales shall be automatically set to an appropriate state for manual driving and lateral and longitudinal control shall be returned to the driver without any continuous control assistance active.

4. **DDT under nominal scenarios**

4.1. Trajectory planning and velocity

4.1.1. Particularities of the ODD (including, where relevant, tight curve radii, ramps, and merging) shall be managed by suitably planning and selecting the trajectory.

4.1.2. The AVP feature shall minimise environmental impact by planning an effective and efficient trajectory to reach transition locations.

4.1.3. The AVP feature shall always maintain a safe distance to other road users or objects based on the smallest relevant object and adapt its speed in an anticipatory manner. The safety distance, the respective maximum speed in accordance with point 6.1., and the smallest relevant object shall be specified by the manufacturer.

5. **DDT under critical scenarios (emergency operation)**

5.1. By way of derogation from Part 1, points 1.4.1, 1.4.2 and 1.4.3, of Annex III, the AVP feature shall avoid all collisions with road users or obstacles cutting in, crossing or being on the trajectory of the vehicle in the direction of driving.

6. **DDT at ODD boundaries**

6.1. Direct transfer to the MRC shall take place in the case of a recognised misuse and when the vehicle sustains recognised damage.

6.2. If the vehicle equipped with an AVP feature only appears to leave the ODD (e.g. due to a temporary inaccuracy in the geographical localisation of the vehicle) and is subsequently being confirmed again to be within the ODD boundaries, this is not considered as giving ground to an MRC and an immediate continuation of the AVP trip is possible.

6.3. The vehicle may leave the MRC if it is switched to manual driving mode and driven by a driver.

7. **Operating manual**

The following aspects shall be addressed and implemented in the operating manual:

7.1. All roles necessary for the safe operation of the AVP feature shall be defined, including the designation of the relevant responsible persons and the allocation of organisational and technical tasks.

7.2. All role assignments shall be documented within the operating manual.

7.3. The operating manual shall include strategies in case of unexpected incidents.

7.4. The operating manual shall include considerations regarding the changes to the ODD during AVP feature operation. A process shall be established and included to ensure the assessment of the planned changes.

PART 3: COMPLIANCE ASSESSMENT

8. **Tests**

8.1. General provisions

8.1.1. Test cases for the verification of the AVP feature shall include all AVP functions.

8.1.2. The scenarios described in point 8.2 of this Annex shall be used. The manufacturer shall select relevant scenarios based on the ODD of the AVP feature.

8.1.3. Pass- and fail-criteria to assess AVP feature safety shall be set by the approval authority, based on the requirements set out in Annex II, on the scenarios set out in Part 1 of Annex III, and on this Annex.

8.2. Test scenarios to assess the performance of the AVP feature

This list of scenarios set out in points 8.2.1. to 8.2.7. contains basic test cases that shall be selected based on and adapted to the ODD, and used to test the compliance of the AVP feature of the ADS.

At the request of the approval authority, additional scenarios that are part of the ODD shall be executed.

The scenarios listed in points 8.2.1. to 8.2.7. include several consecutive individual test steps. Those individual test steps may be carried out sequentially without the AVP trip being cancelled or a new AVP trip request issued for each of the test steps.

8.2.1. AVP hand-over and take-over

8.2.1.1. Parking manoeuvre (hand-over and parking)

The test shall demonstrate that the AVP feature is able to carry out an AVP trip from the transition location to the intended parking space.

Preconditions: vehicle equipped with AVP feature is parked at the transition location.

The scenario shall be executed in the following steps:

Step 1: Set up an AVP trip request.

Step 2: Carry-out of the AVP trip.

Step 3: Wait until AVP trip is finished.

8.2.1.2. Returning to user (take-over)

The test shall demonstrate that the AVP feature is able to carry out an AVP trip from the parking space to a transition location.

Precondition: vehicle equipped with AVP feature standing on a parking space.

The scenario shall be executed in the following steps:

Step 1: Set up an AVP trip request.

Step 2: Carry-out of the AVP trip.

Step 3: Waiting until AVP trip is finished.

8.2.2. System override and deactivation

8.2.2.1. Deactivation outside the vehicle

The test shall demonstrate the possibility of system override or deactivation outside the vehicle equipped with the AVP feature.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following steps:

Step 1: Perform override action.

Step 2: Leave MRC.

8.2.2.2. Override or deactivation inside the vehicle

The test shall demonstrate the possibility of system override or deactivation due to interventions to driving equipment or controls by a person inside the vehicle.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following steps:

Step 1: Intervention shall be done with corresponding drive equipment or controls.

Step 2: The DDT shall be continued according to the declared strategy of the manufacturer.

8.2.3. Collision avoidance

8.2.3.1. Starting the AVP trip

The test shall demonstrate that the AVP feature is able to detect and react to objects in the vehicle's close-proximity so that the vehicle is prevented from starting the AVP trip.

Precondition: The vehicle is located on a transition location or parking space and AVP feature is activated.

The scenario shall be executed in the following steps:

Step 1: The smallest relevant object shall be placed around the vehicle.

Step 2: The smallest relevant object shall be removed.

8.2.3.2. Smallest relevant object on the trajectory of the vehicle equipped with AVP feature

The test shall demonstrate that the AVP feature is able to detect and stop before the smallest relevant object along the driving path and continue in case the intended trajectory is free again.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following steps:

Step 1: The smallest relevant object shall be placed on the intended trajectory of the vehicle in all of the following locations. The approval authority may choose to require tests with additional conditions.

a) Step 1 shall be carried out with the smallest relevant object placed (if applicable):

(i) centrally on the intended trajectory, in a distance of at least one vehicle length away from the parking space;

(ii) centrally on the intended trajectory, behind a curve;

(iii) on the upper part (between 0–1 m after the ramp has reached a constant slope) of a downward ramp;

(iv) on the flat area behind a downward parking ramp (between 0–1 m after the driving area has become flat);

(v) in the centre of a parking space;

(vi) on the lower part (between 0–1 m after the ramp has reached a constant slope) of an upward ramp;

(vii) on the flat area behind an upwards parking ramp (0–1 m after the driving area has become flat);

(viii) centrally on the intended trajectory, behind a curve, on a ramp.

Step 2: The smallest relevant object shall be removed.

8.2.3.3. Static or dynamic objects next to the intended trajectory of the vehicle equipped with an AVP feature

The test shall demonstrate that the AVP feature is able to detect and proportionately react to an object located beside the driving path and correspondingly adapt the speed of the vehicle.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed both for static and dynamic objects, in the following steps:

First Step for static object: The static object shall be placed at a distance lower than the permitted safety distance to the side of the driving corridor before the vehicle equipped with AVP feature approaches.

First Step for dynamic object: The dynamic object shall be moved parallel to the vehicle equipped with AVP feature, at a lateral distance lower than the lateral reaction distance while the vehicle is approaching.

Second Step for both static and dynamic object: In case the AVP feature has stopped the vehicle for the static and/or dynamic object, the object shall be removed.

8.2.3.4. Dynamic objects

The test shall demonstrate that the AVP feature is able to avoid a collision with obstructed and unobstructed dynamic objects.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed for crossing, moving towards the side or moving opposite to the vehicle, in the following steps:

First Step for crossing: A dynamic object shall cross the driving path of the vehicle equipped with AVP feature from the outside of the driving path in front of the moving vehicle, resulting in a high risk of collision.

First Step for moving towards the side: A dynamic object shall move from outside the driving path towards the lateral side of the vehicle equipped with AVP feature, resulting in a high risk of collision.

First Step for moving opposite: A dynamic object shall move towards the vehicle equipped with AVP feature, against the direction of travel.

Second Step: The dynamic object shall be removed.

8.2.4. Compliance with traffic rules

8.2.4.1. Exiting a parking space

The test shall demonstrate that the AVP feature gives way when driving out from the parking space.

Precondition: the vehicle equipped with AVP feature is parked on transition location or a parking space, while another vehicle is ready to claim the right of way.

The scenario shall be executed in the following steps:

Step 1: an AVP trip request shall be sent and AVP feature shall be activated.

Step 2: the other vehicle shall be driven so that it passes the vehicle equipped with AVP feature at the time, when it would start driving out from the parking space.

Step 3: the other vehicle shall be driven past and away from the vehicle equipped with AVP feature.

8.2.4.2. Yielding and the right of way

The test shall demonstrate that the AVP feature stops or yields at junctions, intersections or merging areas, respects the right of way rules and considers other vehicles approaching these areas.

Precondition: the vehicle is driving with AVP feature activated and approaching a junction, crossing or merging area; another vehicle is ready to claim for the right of way.

The scenario shall be executed in the following steps:

Step 1: The other vehicle shall reach the junction, crossing or merging area approximately at the same time as the vehicle equipped with AVP feature.

Step 2: The other vehicle shall continue driving through the junction, crossing or merging area.

8.2.5. AVP feature activation

8.2.5.1. External infrastructure information supply not appropriate for the AVP feature

The test shall demonstrate that the AVP feature will not be activated in case of inappropriate external infrastructure information supply.

Precondition: vehicle equipped with AVP feature parked at the transition location which has inappropriate external infrastructure information supply.

The scenario shall be executed in the following step:

Step 1: an AVP trip request shall be attempted.

8.2.6. Perception system

8.2.6.1. Sensor occlusion

The test shall demonstrate that the AVP feature reacts safely to occlusion in the field of view.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following steps:

Step 1: sensor(s) overseeing the part of the vehicle‘s actual driving path shall be covered.

Step 2: Sensor occlusion shall be removed.

8.2.6.2. Special objects

The test shall demonstrate that the limitations of the sensors used for OEDR in the AVP feature are appropriately compensated for to ensure the safe execution of the DDT.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following steps:

Step 1: Objects relevant for testing the limitations of the AVP sensors (e.g. with a highly homogeneous surface, weak contrast to background, reflectivity, etc.) shall be placed randomly in the driving trajectory of the vehicle.

Step 2: In case the vehicle has stopped, the relevant object shall be removed.

8.2.7. Failure scenarios

8.2.7.1. Critical failure of wireless connection between AVP feature and external infrastructure

The test shall demonstrate that a failure of the wireless connection is managed safely.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following steps:

Step 1: Wireless signal shall be interrupted.

Step 2: If necessary, wait until the AVP feature interprets the interruption of the radio connection as a permanent loss of the wireless link.

8.2.7.2. Failure of a perception sensor

The test shall demonstrate that the AVP feature detects failures of sensors required for OEDR (sensors in the vehicle and/or in the external infrastructure) and reacts appropriately.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following step:

Step 1: The data connection of a sensor that is relevant for OEDR in the vehicle‘s actual driving trajectory shall be interrupted.

8.2.7.3. Failure within the external infrastructure

The test shall demonstrate that the AVP feature detects errors in the external infrastructure and reacts appropriately.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following step:

Step 1: A critical fault in the external infrastructure shall be artificially induced.

8.2.7.4. Failure within the vehicle

The test shall demonstrate that the AVP feature detects failures within the vehicle and reacts appropriately.

Precondition: vehicle driving with AVP feature activated.

The scenario shall be executed in the following step:

Step 1: Artificial manipulation disabling or creating the failure of an AVP feature relevant vehicle system shall be induced.

(*) Regulation No 79 of the Economic Commission for Europe of the United Nations (UN/ECE) – Uniform provisions concerning the approval of vehicles with regard to steering equipment [2025/3] (OJ L, 2025/3, 10.1.2025, ELI: http://data.europa.eu/eli/reg/2025/3/oj)

(**) Regulation No 13 of the Economic Commission for Europe of the United Nations (UN/ECE) – Uniform provisions concerning the approval of vehicles of categories M, N and O with regard to braking [2016/194] (OJ L 42, 18.2.2016, p. 1, ELI: http://data.europa.eu/eli/reg/2016/194/oj)

(***) Regulation No 13-H of the Economic Commission for Europe of the United Nations (UN/ECE) – Uniform provisions concerning the approval of passenger cars with regard to braking [2015/2364] (OJ L 335, 22.12.2015, p. 1, ELI: http://data.europa.eu/eli/reg/2015/2364/oj).'