Submitted by the expert from the Netherlands

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(127th GRSG, 15 – 19 April 2024
agenda item 15)

Draft Proposal for a New UN Regulation Concerning the Approval of a Vehicle Type with regard to its Field of Vision Assistant

Submitted by the Informal Working Group on Field of Vision Assistant *

The text reproduced below was prepared by the Informal Working Group on Field of Vision Assistant (IWG-FVA) to create a new draft UN Regulation on uniform technical prescriptions concerning approval of a vehicle with regard to its Field of Vision Assistant, in the framework of the process of splitting the UN Regulation No. 125 into two separate Regulations.
The modifications made by this document to ECE/TRANS/WP.29/GRSG/2024/27 are marked in "**(bold) blue**" for new or strikethrough for deleted characters. Further editorial modifications are added with revision 1 of this document and marked in "Red".

* In accordance with the programme of work of the Inland Transport Committee for 2024 as outlined in proposed programme budget for 2024 (A/78/6 (Sect. 20), table 20.5), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

I. Proposal

"UN Regulation No. XXX[1]

Uniform Prescriptions Concerning Approval of a Vehicle Type with regard to its Field of Vision Assistant Systems

Contents

*Page***

[1] The Regulation number will be known when this UN Regulation enters into force. [XXX] will be replaced by the Regulation number once determined.

** Page numbers will be added at a later stage.

0. Introduction (for Information)

0.1. Obstructions range from physical parts of the vehicle architecture (e.g. A-pillars, heating wires, antenna wires, etc.) to other light projections that may hinder perception of outside scene in the driver's field of vision, known as FVA. This Regulation addresses obstructions caused by FVA and defines the conditions under which they are allowed also in the view of limiting distraction. Light reflections (that do not come from FVA) are not considered as obstructions or interference or both (e.g. glaring effect).

0.2. While driving, the information shall be driving or ~~operator~~ **operation** related or both and safety relevant. FVA causes obstructions in the transparent field of vision and may cause distraction. At the same time it can help the driver. It is important to find a good balance between the two. The aim of FVA is to improve safety by supporting drivers in the direct dynamic driving tasks, providing visual information without encouraging behaviour that could lead to a loss of vigilance or driver attention.

0.3. Mandatory information (such as the vehicle speed) may only be displayed via FVA as a secondary source of such information. This restriction is done because mandatory information shall be permanently visible under all foreseeable circumstances. In the future, if there is a need to have FVA as a primary source for mandatory information, FVA shall be evaluated as such and a test procedure shall be developed to enable to check that the information is visible at all-time (e.g. during heavy rain, fog, snowy background, heavy sunlight, night-time).

0.4. External information sources are possible, but shall not change the performance of approved FVA: the vehicle manufacturer shall ensure that data that are provided by an external device (e.g. through smartphone applications), that are not part of the type approval, shall not be used nor change the visual appearance of FVA.

0.5. Presented information in area 1 ~~shall be~~ **is** non-static, as related to a dynamic traffic scenario, and optimized to reduce obstruction.

0.6. Presented information in area 2 may be static information such as the vehicle speed. **Non** ~~[Information from the entertainment system or phone or both (e.g. incoming calls, play lists, etc.) is not considered~~ driving related **information is not** ~~and shall not be~~ displayed by **the** FVA~~]~~**, while a driver is performing the Dynamic Driving Task (DDT), except information related to an incoming phone call**.

0.7. Manual adjustment of FVA by the driver shall be possible (e.g. for an optimised contrast or a complete switch off if necessary).

0.8. Automatic deactivation in case of electrical malfunction leading to excessive light projection is foreseen, in order to prevent e.g. potential full or partial obstruction of the field of vision.

0.9. Compared to UN Regulation No. 125, it was decided that this Regulation should clarify in which areas and what information may be displayed, since the area S as we know from UN Regulation No. 125, does not apply to vehicle categories other than M_1 and N_1 and at the same time, area S was never

developed to allow for systems like classic Head Up Displays, although area S was typically used for this purpose.

0.10. Developments that may interact with FVA (e.g. light projected bylamps) must be considered when defining the safety concept of FVA.

0.11. The limit of 50 per cent in paragraph 5.2.1.2. ensures that besides the coverage criterion for symbols, also an accumulation of information is prevented; this aims at system errors but also at multiple dynamic objects being displayed in ~~augmented reality~~ FVA systems (e.g. many pedestrians crossing a road at the same time), preventing that each one is highlighted, filling out more than 50 per cent of the available FVA display area.

0.12. The basic figure mentioned in paragraph 5.2.1.1 represents a 0.3m diameter, 1m high cylinder 22m away from eye point.

0.13. The area 2 coverage criteria are based upon the area S as defined in UN Regulation No. 125. By taking the 20 per cent limitation from area S and converting it into units in [°²], the area will be independent from the virtual image distance and the vehicle category.

0.14. The value "x" in Annex 5 of 70m is based upon research performed during one of the workshops of the Informal Working Group. Compared to UN Regulation No. 125, where a fixed angle of -1° defines the upper border of area S, it was decided to make this dependent on the vertical distance of the driver's eyepoint to the road surface. This way, the location of static information in Area 2 is always located in the same field of view, independent of the vehicle's design.

1. Scope

1.1. UN Regulation No. [xxx] applies to all vehicles of category M and N[2] equipped with Field of Vision Assistant systems.

1.2. The purpose of the Regulation is to ensure that the Field of Vision Assistant assists the driver in performing the task of driving while limiting the obstruction and the possible distraction it may cause. This Regulation is limited to the information visible to the driver in the forward field of vision.

1.3. This Regulation does not apply to vehicles not designed to be driven by a human.

2. Definitions

2.1. "*Approval of a vehicle type*" means the full procedure whereby a Contracting Party to the Agreement certifies that a vehicle type meets the technical requirements of this Regulation.

2.2. *"Forward field of vision"* means the 180° field of vision through the transparent area of the windscreen and other glazed surfaces including side windows, approved under UN Regulation No. 43.

[2] As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.7, para. 2. - https://unece.org/transport/vehicle-regulations/wp29/resolutions

2.3. *"Transparent area"* means the area of a vehicle windscreen or other glazed surface through which light transmittance measured at right angles to the surface is not less than 70 per cent. In the case of armoured vehicles, the light transmittance factor is not less than 60 per cent.

2.4. *"Field of Vision Assistant (FVA)*" means the visual information, as projected by the system through the transparent area ~~of either the vehicle windscreen or other glazed surfaces~~ in the forward field of vision, to support the awareness of the driver.

2.5. "*Vehicle type with regard to the Field of Vision Assistant*" means vehicles which do not differ in such essential aspects as:

2.5.1. The technology of FVA.

2.5.2. The shape, dimensions, inclination and other characteristics of the windscreen, other glazed surfaces and their mountings as far as they affect FVA.

2.6. *"Dynamic Driving Task (DDT)"* is the control and execution of all longitudinal and lateral movements of the vehicle.

2.7. *"Transition demand"* is a logical and intuitive procedure to transfer the Dynamic Driving Task (DDT) from the system (automated control) to the driver (manual control). This request is given from the system to the driver.

~~2.8. *"Transition phase"* means the duration of the transition demand~~.

2.~~9~~8. *"Obstruction"* means the physical parts or interference in the forward field of vision reducing perception of light transmittance with the exception of stray light, (e.g. reflection from vehicle interior, sunlight glare).

2.~~10~~9. *"Driver's ~~eye~~ **Eye** ~~point~~ **Point (DEP)"*** **for this Regulation** means**:**

2.9.1. *"Adjusted ocular reference point"* for vehicles of categories M1 and N1 which refers to the adjusted ocular reference point as defined in UN Regulation No. 166.

2.9.2. ~~or~~ *"E2-point"* **for vehicles of categories M2, M3, N2 and N3** ~~means~~ **refers to** the **forward** midpoint between the centre of the driver's left and right eye as defined in UN Regulation No. 167. ~~Three separate eye points are defined. E2 is the forward eye point, E1 is the left-side eyepoint and E3 is the right-side eyepoint. Each point is defined using the three-dimensional reference system. E2 is defined by an offset from the accelerator heel point of 1,163.25 mm in the Z axis, and 678 mm rearward in the X axis. The position of E2 in the Y axis is on a vertical plane, parallel to the median longitudinal plane and passing through the centre of the driver's seat. In this Regulation, only E2 is used.~~

~~2.11. *"V points"* means points as defined in UN Regulation No. 125 where the position in the passenger compartment is determined as a function of vertical longitudinal planes passing through the centres of the outermost designated seating positions on the front seat and in relation to the "R" point and the design angle of the seat back (for definitions see Addendum 6 of Mutual Resolution No. 1 (M.R.1))[3], which points are used for verifying compliance with the field of vision requirements. In this Regulation, only V2 is used.~~

2.~~12~~10. *"Area 1"*: upper~~/medium~~ area of the forward field of vision intended for displaying non-static information ~~such as augmented reality~~.

~~[3] Addendum 6 of Mutual Resolution No. 1 (M.R.1) (document ECE/TRANS/WP.29/1101/Amend.5); see https://unece.org/transport/vehicle-regulations/wp29/resolutions~~

2.~~13~~11. *"Area 2"*: lower area of the forward field of vision intended for displaying non-static information as well as static information.

~~2.14. *"Augmented reality"* for this Regulation, means the manner in which components of the digital world blend into a person's perception of the real world, not as a simple display of data, but through the integration of immersive sensations, which are perceived as part of the environment.~~

2.~~15~~12. *"Vehicle Master Control Switch"* means the device by which the vehicle's on-board electronics system is brought, from being switched off, as in the case where a vehicle is parked without the driver being present, to normal operation mode (i.e. the vehicle status is "ready to drive").

2.~~16~~13. *"Static information"* information which is designed to be visible at a fixed location for a longer period of time. Content displayed at a fixed location,(e.g. the vehicle speed) will vary during driving, but is considered static information.

2.~~17~~14. *"Parked"* means, for this Regulation: not actively taking part in traffic.

2.~~18~~15. *"Vehicles of category M_2 and N_2 derived from M_1 or N_1"* means those vehicles of M2 and N2 category which, forward of the B-pillars, have the same general structure and shape as a pre-existing M_1 or N_1 category vehicle.

2.~~19~~16. *"Three-dimensional reference grid"* means a reference system which consists of a vertical longitudinal plane X-Z, a horizontal plane X-Y and a vertical transverse plane Y-Z; the grid is used to determine the dimensional relationships between the position of design points on drawings and their positions on the actual vehicle. The procedure for situating the vehicle relative to the grid is specified in Addendum 6 of Mutual Resolution No. 1 (M.R.1) [3]; all coordinates referred to ground zero shall be based on a vehicle in running order[4] plus one front-seat passenger, the mass of the passenger being 75 kg ±1 per cent.

2.~~20~~17. *"Driving related"*: information which supports the driver in performing the driving task.

2.~~21~~18. *"~~Operator~~ **Operation** related":* information which supports the operator in their responsibility for the cargo and/or equipment in case of commercial vehicles.

2.~~22~~19. *"~~[On/o~~**O**paque~~]~~-pixels"* are pixels brighter than ~~[~~70~~/75]~~ per cent of maximum brightness, considering different ambient conditions, at the maximum adjustment within the **driver** brightness adjustment range of the FVA system.

3. Application for Approval

3.1. The application for approval of a vehicle type with regard to this Regulation shall be submitted by the manufacturer.

3.2. It shall be accompanied by: an information document drafted in accordance with the model shown in Annex 1, a description of the technical characteristics of the Field of Vision Assistant and the information provided by it.

[4] The mass of a vehicle in running order includes the mass of the vehicle and its body with cooling fluid, lubricants, fuel, 100 per cent of other liquids, tools, spare wheel and driver. The mass of the driver is evaluated at 75 kg (distributed as follows: 68 kg for the mass of the occupant and 7 kg for the mass of luggage, in accordance with ISO Standard 2416:1992. The tank contains 90 per cent and the other liquid-containing appliances (other than those intended for waste water) 100 per cent of the capacity declared by the manufacturer.

The necessary technical files relating to paragraph 5.1.7. shall be made available for discussion with the Type Approval Authority or Technical Service or both. Such files will be discussed on a confidential basis and will not be part of the information package other than as a reference.

3.3. Vehicle(s) representative of the type(s) to be approved shall be submitted to the technical service responsible for conducting the approval tests.

4. Approval

4.1. If the vehicle type submitted for approval to this Regulation meets the requirements of this Regulation, approval of that type shall be granted.

4.2. An approval number shall be assigned to each type approved. Its first two digits (at present 00, corresponding to the Regulation in its original form) shall indicate the series of amendments incorporating the most recent major technical amendment made to the Regulation at the time of issue of the approval. The same Contracting Party shall not assign the same number to another type of vehicle or component as defined in this Regulation.

4.3. Notice of approval or of extension of approval of a type pursuant to this Regulation shall be communicated to the Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 3 to this Regulation.

4.4. There shall be affixed, conspicuously and in a readily accessible place specified on the approval form, to every vehicle conforming to a vehicle type approved under this Regulation, an international approval mark conforming to the model described in Annex 3, consisting of either:

4.4.1. A circle surrounding the letter "E" followed by:

(a) The distinguishing number of the country which has granted approval;[5] and

(b) The number of this Regulation, followed by the letter "R", a dash and the approval number to the right of the circle prescribed in this paragraph.

4.5. The approval mark shall be clearly legible and be indelible.

4.6. The approval authority shall verify the existence of satisfactory arrangements for ensuring effective checks on conformity of production before type-approval is granted.

5. Specifications

5.1. Information displayed

5.1.1. FVA shall be driving related or ~~operator~~ **operation** related or both, and comply with the requirements of paragraph 5.1.2. onward, except when the vehicle is parked or performing the Dynamic Driving Task (DDT) (e.g. as described in UN Regulation No. 157). In the latter case, if non-driving related or ~~operator~~ **operation** related information or both is displayed, it shall disappear within 500ms upon initiation of a transition demand.

[5] The distinguishing numbers of the Contracting Parties to the 1958 Agreement are reproduced in Annex 3 to the Consolidated Resolution on the Construction of Vehicles (R.E.3), document ECE/TRANS/WP.29/78/Rev.7 - https://unece.org/transport/vehicle-regulations/wp29/resolutions

For the purpose of this Regulation, an incoming phone call, even though it is considered non-driving related, can be displayed.

5.1.2 Static information shall be displayed only in area 2 whereas non-static information may be displayed in areas 1 and 2.

5.1.3 Information to the driver, mandated by any UN Regulation, shall not be replaced by information given via the FVA system. A duplication of such information via the FVA system shall be permitted.

5.1.4. FVA ~~shall be limited to~~ **is allowed for**:

	Area 1	*Area 2*
(a) Warning or highlight hazardous traffic situation	**yes** ~~X~~	**yes** ~~X~~
(b) Warning or highlight vulnerable road users or other road users which may be overseen	**yes** ~~X~~	**yes** ~~X~~
(c) Information to maintain the distances to surrounding road users and infrastructure	**yes** ~~X~~	**yes** ~~X~~
(d) Information to find the correct driveway	**yes** ~~X~~	**yes** ~~X~~
(e) Information to maintain the correct driveway and to follow the road instructions	**no**	~~X~~ **yes**
(f) Information to support the driver's setting of FVA	~~X~~ **yes**	~~X~~ **yes**
(g) Other warnings and information to the driver that require driver's immediate action or attention	~~X~~ **yes** for a duration of **max. 6** ~~[5 – 8seconds] max.~~	**yes** ~~X~~
(h) Other warnings and information to the driver that require driver's action or attention	**no**	**yes**
(i) Static driving or ~~operator~~ **operation** related information	**no**	~~X~~ **yes**
(j) Separator to structure information	**no**	**yes**

Examples of the visual information listed above are given in Appendix 1 of Annex 4 for areas 1 and 2, and in Appendix 2 of Annex 4 for static information in area 2.

5.1.5. The FVA system's safety concept shall address a link between the amount or appearance of information or both that can be displayed and the constraints of the external environment **(~~e.g. urban and non-urban~~)** with the aim of not overstraining the driver in performing the dynamic driving task.

5.1.6. It shall be possible for the driver to adjust the functional content or the amount of information or both to be displayed in accordance with paragraph 5.1.4. except subparagraph 5.1.4.(g). The last setting shall be the initial setting when the vehicle master control switch is activated again. **If any personal settings are available, they may be used alternatively.**

5.1.7. The vehicle manufacturer shall show that FVA does not cause additional distraction and unnecessary obstruction. To show compliance with this high-level requirement, the manufacturer shall present the following documentation for type approval: a risk reduction analysis using functional safety standard such as ISO 26262 and safety of the intended functionality standard such as ISO 21448, which documents the risk to vehicle occupants caused by distraction and obstruction and documents the reduction of risk resulting from implementation of the identified risk mitigation functions or characteristics.

For the judgement of the impact of FVA, other systems that may interact with FVA need to be considered in the analysis (e.g. projected symbols from head lamps initiated by the vehicle).

5.1.8. The symbols and graphics shown by FVA in area 1 shall disappear when the underlying condition for their display does not exist anymore.

5.1.9. In the case when FVA displays information sourced external to the FVA subject to approval (e.g. external GNSS handheld device), this display shall respect the intended content (e.g. content, time, appearance, size and colour) as described by the manufacturer in the Type Approval documentation. The fulfilment of the provisions of this paragraph shall be demonstrated by the manufacturer to the technical service.

5.2. Obstructions

FVA shall aim to minimize the masking of objects.

~~5.2.1. For area 1, this requirement is deemed to be met if the maximum opaque pixel ratio does not exceed a maximum of [50] per cent of the available FVA display area; and~~

~~5.2.1.1. a displayed symbol either has a brightness of not more than 70 per cent; or~~

~~5.2.1.2. opaque-pixels of displayed symbols, arranged in a worst-case scenario, do not cover a basic figure consisting of a rectangle of 2.6° height and 0.8° width by more than [35/70] per cent, when measured in accordance with Annex 6.~~

~~5.2.2. For area 2, this requirement is deemed to be met if either:~~

~~[5.2.2.1. The FVA does not cover a rectangle of more than [66°²], when measured in accordance with Annex 7];~~

~~or~~

~~5.2.2.2. The area 2 information complies with paragraph 5.2.1.~~

5.2.1. For assessing the level of potential obstruction, only opaque-pixels shall be considered.
This requirement is deemed to be met if:

5.2.1.1. For Area 1,

a) the maximum opaque-pixel ratio does not exceed a maximum of 50 per cent of the FVA display area 1, and

b) opaque-pixels of displayed symbols, arranged in a worst-case scenario (e.g. taking into consideration overlapping information), do not cover a basic figure consisting of a rectangle of 2.6° height and 0.8° width by more than 50 per cent, when measured in accordance with Annex 6.

5.2.1.2. For Area 2,

a) the opaque-pixels do not cover an area of more than 66°², or

b) the information complies with paragraph 5.2.1.1. or

c) the information complies with UN Regulation No. 125, 03 series of amendments

5.2.2. In addition to automated brightness adjustment, it shall be possible for the driver to manually adjust the light intensity of **the** FVA.

5.3. Deactivation

5.3.1. It shall be ~~easily~~ possible for the driver to **easily** switch off **the** FVA by an intuitive action. ~~[~~It shall consist of at least one manual option with a maximum of two consecutive steps. Intuitive action (e.g. double press, swipe and press) is considered as a single step~~]~~. This **provision (i.e. a maximum of two consecutive steps)** does not apply when the vehicle is in a backing event as defined in UN Regulation No. 158. **This derogation does not apply to FVA located in the field of view used in a backing event.**

5.3.2. The part of FVA, which in case of an electrically detectable failure, affects the visual information as an identified risk considered in the safety approach, shall be automatically deactivated or brought to a safe state.

5.4. The value x defining the areas 1 and 2 ~~as~~ **is** described **and determined** in Annex 5 ~~is determined according to Annex 6~~.

~~5.5. For vehicles of categories M1/N1, tThe V2 point is used to determine the value X; for M2, N2, M3 and N3 vehicles, the E2 point is used.~~

5.~~5~~4.1. Notwithstanding paragraph 5.~~6~~4., vehicles of categories M2 and N2, derived from M1 or N1 approved to UN Regulation No. 125, may alternatively use the ~~V2~~ **adjusted ocular reference point** for calculation of the value ~~X~~x.

5.~~5~~4.2. The lower limit of area 2 is defined by the highest possible upper limit of the opaque obscuration area on the ~~windshield~~ **windscreen**, referred to in UN Regulations No. 43.

5.~~6~~5. For the use of symbols and colour appearance, reference is made to UN Regulation No. 121 and ISO 2575. A vehicle type approved to UN Regulation No. 121 is deemed to comply with this paragraph 5.

5.~~7~~6. The Technical Service or Type Approval Authority or both may agree to an alternative test procedure (e.g. virtual testing) to verify that the requirements of paragraph 5. are met.

5.~~8~~7. Vehicle types of categories M_1 and N_1 approved to UN Regulation No. 125, 02 series of amendments before ~~[~~1 September 2026~~]~~ are deemed to comply with this paragraph 5.

5.~~9~~8. When the visual information, as projected by the system, is adjustable, the visual information shall be placed in the normal position indicated by the manufacturer or, failing that, midway between the limits of the range of adjustment.

6. Modification of Vehicle Type and Extension of Approval

6.1. Every modification of a vehicle or component type, with regard to this Regulation, shall be notified to the administrative department which approved the vehicle or component type. The department may then either:

6.1.1. consider that the modifications made are unlikely to have an appreciable adverse effect and that in any case the component or the vehicle still complies with the requirements; or

6.1.2. require a further report from the technical service responsible for conducting the tests.

6.2. Confirmation or refusal of approval, specifying the alteration, shall be communicated by the procedure specified in paragraph 4.3. above to the Contracting Parties to the Agreement applying this Regulation.

6.3. The competent authority issuing the extension of approval shall assign a serial number to each communication form drawn up for such an extension.

7. Conformity of Production

7.1. Procedures concerning conformity of production shall comply with those set out in the 1958 Agreement, Schedule 1 (E/ECE/TRANS/505/Rev.3) and meet the following requirements:

7.2. For each type of vehicle the tests prescribed in the relevant part(s) of this Regulation shall be carried out on a statistically controlled and random basis, in accordance with one of the regular quality assurance procedures;

7.3. The Type Approval Authority which has granted approval may at any time verify the conformity of control methods applicable to each production unit. The normal frequency of such inspections shall be once every year.

8. Penalties for Non-Conformity of Production

8.1. The approval granted in respect of a vehicle type pursuant to this Regulation may be withdrawn if the requirements laid down in paragraph 7 above are not complied with.

8.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation, by means of a form conforming to the model in Annex 2.

9. Production Definitively Discontinued

If the holder of the approval completely ceases to manufacture a vehicle type approved in accordance with this Regulation, they shall so inform the authority which granted the approval. Upon receiving the relevant communication, that authority shall inform thereof the other Contracting Parties to the Agreement applying this Regulation by means of a form conforming to the model in Annex 2.

10. Names and Addresses of Technical Services Responsible for Conducting Approval Tests and of Type Approval Authorities

The Contracting Parties to the Agreement applying this Regulation shall communicate to the United Nations secretariat the names and addresses of the technical services responsible for conducting approval tests and of the Type Approval Authorities which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, issued in other countries are to be sent.

Annex 1

Information Document

(Maximum format: A4 (210 mm x 297 mm))

In accordance with paragraph 5. of Regulation No. [XXX] on uniform technical prescriptions concerning approval of a vehicle with regard to its Field of Vision Assistant (FVA).

1. General

1.2. Make (trade name of manufacturer): .....

1.2. Type: .....

1.3. Means of identification of the type, if marked on the vehicle: [6].....

1.3.1. Location of that marking: .....

1.4. Category of vehicle:[7] .....

1.5. Name and address of manufacturer:.....

1.6. Location and method of affixing of the approval mark: .....

1.7. Address(es) of assembly plant(s): .....

2. Description of the Field of Vision Assistant (FVA)

2.1. A detailed technical description of the FVA:.....

2.2 Documentation as described in paragraph 5.1.7 (referenced and made available on request of the type approval authority): ……

2.3. location, dimension and colours of symbols used in the FVA:.....

2.4. Method for switching off the FVA: .....

2.5. Value x:.....

2.5.1. based upon **DEP using UN Regulation No. 166 / 167**: .....[8]

[6] If the means of identification of type contains characters not relevant to describe the vehicle type covered by the information document, such characters shall be represented in the documentation by the symbol: '?' (e.g. ABC??123??).

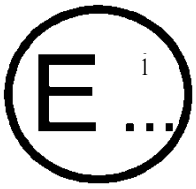
[7] As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.7, para. 2. - https://unece.org/transport/vehicle-regulations/wp29/resolutions

[8] **Strike through where not applicable**

Annex 2

Communication

(Maximum format: A4 (210 x 297 mm))



issued by: Name of administration:
.....
.....
.....

Concerning: [2] Approval granted
Approval extended
Approval refused
Approval withdrawn
Production definitively discontinued

of a vehicle type with regard to the location and content of its Field of Vision Assistant pursuant to UN Regulation No. XXX

Approval No. .....

Section I

1. General

1.1. Make (trade name of manufacturer):.....

1.2. Type:.....

1.3. Means of identification of type, if marked on the vehicle: [3].....

1.3.1. Location of that marking:.....

1.4. Category of vehicle: [4].....

1.5. Name and address of manufacturer:.....

1.6. Position of approval mark on the vehicle:.....

Section II

1. Additional information (where applicable): see addendum

2. Technical service responsible for carrying out the tests: .....

3. Date of test report: .....

4. Number of test report:.....

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[1] Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulations).

[2] Strike out what does not apply.

[3] If the means of identification of type contains characters not relevant to describe the vehicle type covered by the type-approval certificate, such characters shall be represented in the documentation by the symbol: '?' (e.g. ABC??123??).

[4] As defined in the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.7, para. 2. - https://unece.org/transport/vehicle-regulations/wp29/resolutions

5. Remarks (if any): see addendum

6. Place:.....

7. Date:.....

8. Signature:.....

9. The index to the information package lodged with the approval authority, which may be obtained on request, is attached:.....

Addendum
to UN type approval certificate No. …

Concerning the type approval of a vehicle with regard to Regulation No. XXX

1. Additional information:.....

1.1. Brief description of the Field of Vision Assistant: .....

1.2. Concise description:

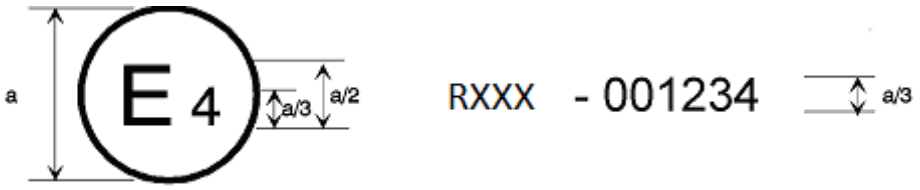
	FVA, visual information to support the awareness of the driver:	Conformance:
1.2.1.	Area 1 content (which shows that only non-static driving and/or ~~operator~~ **operation** related content is available)	yes/no/N/A [1]
1.2.2.	Area 2 content (with proof of max. coverage of XX °)	yes/no/N/A [1]
~~1.2.3.~~	~~Value X~~	~~…°~~

2. Remarks: .....

Annex 3

Arrangements of Approval Marks

(see paragraphs 4.4. to 4.4.2. of this Regulation)



a ≥ 8 mm

The above approval mark affixed to a vehicle shows that the vehicle type concerned with regard to its FVA was approved in the Netherlands (E4) pursuant to Regulation No. [xxx] under approval No. 001234. The first two digits (00) of the approval number indicate that the approval was granted in accordance with the requirements of Regulation No. [xxx] in its original form.

Annex 4

Examples for Warning, Highlight and Information

Annex 4 – Appendix 1

Field of Vision Assistant: Area 1 and Area 2

Examples (non-exhaustive) of non-static visual information as specified in paragraphs 5.1.2. and 5.1.4.:

	Examples
Warning or highlight or both hazardous traffic situation	Abrupt braking situations or other emergency cases
	Oncoming traffic in turning ~~maneuvers~~ **manoeuvres**
	Oncoming **t**~~T~~raffic **j**~~J~~am, vehicle break down and road conditions.
	Vehicles leaving the lane or entering the own driving path
Warning or highlight or both vulnerable road users or other road users which may be overseen	Pedestrians
	Cyclists
	Crossing road users
	Road users in blind spot or road users covered by other objects
	Animals
Information to maintain the distances to surrounding road users and infrastructure as well as information on the infrastructure	Distance of vehicle (measured from the front, the side or the rear) to the street and lane boundaries
	Lane and distance keep assist, lane change assist, upcoming speed limits
Information to find the correct driveway	Navigation **i**~~I~~nformation Highlighting stop lines and pedestrian crosswalks
Information to support driver's setting of the FVA	Highlighting edges of the position of the displayed visual information during adjustment
Warnings and information to the driver that require the driver's immediate action or attention	Transition demand or **h**~~H~~ands-off warning or both
	Requests to stop the vehicle immediately due to safety relevant failures of the vehicle or its systems
	Requests to switch off systems immediately due to safety relevant failures.
	~~Operator~~ **Operation** related warnings

Annex 4 – Appendix 2

Field of Vision Assistant Area 2 Only

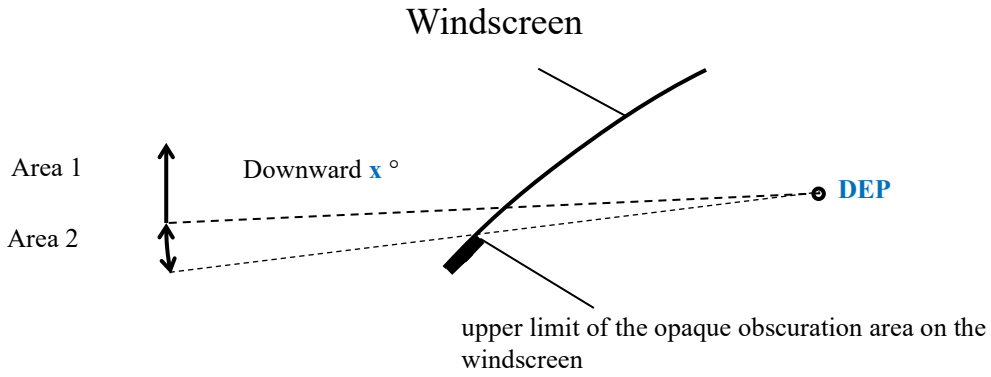
Examples **(non-exhaustive)** of static visual information as specified in paragraph 5.1.4.:

	Examples
Information related to driving task	Speedometer, ADAS status or setting speed limitation setting, throttle or transmission control**, symbol for speak mode, voice recognition (see symbol recommendation N.02 from ISO 2575:2021)**
Information to maintain the correct driveway and to follow the road instructions	Static direction indication (e.g. **static** arrow, distance & time to destination), static speed limit
Warnings and information to the driver that require driver's action or attention	Fuel indicator, oil level, pressure indicator**, incoming phone call**
Separator to structure information	**Border line to separate the information grouping**

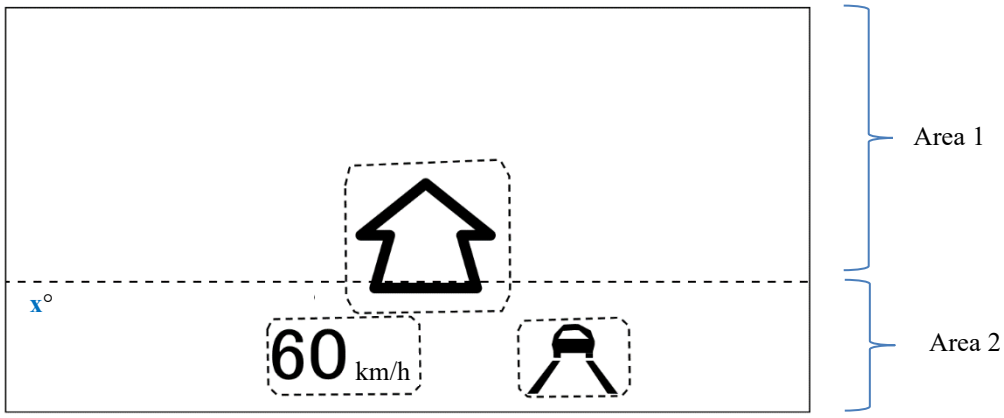
Annex 5

Target Area

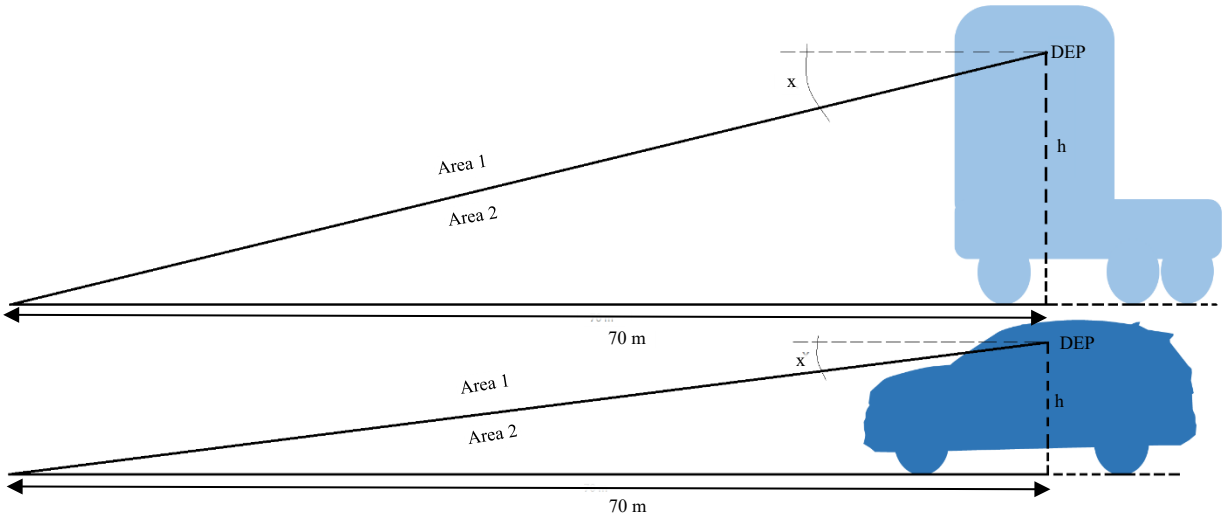
The target range:



Position of the visual information when viewed from the eye point



Determination of the Value "x":



x = arctan (h/70)

With "x" in [°] and rounded to one decimal place (x.x °); "h" in [m] and rounded to 2 decimal places (y.yy m)

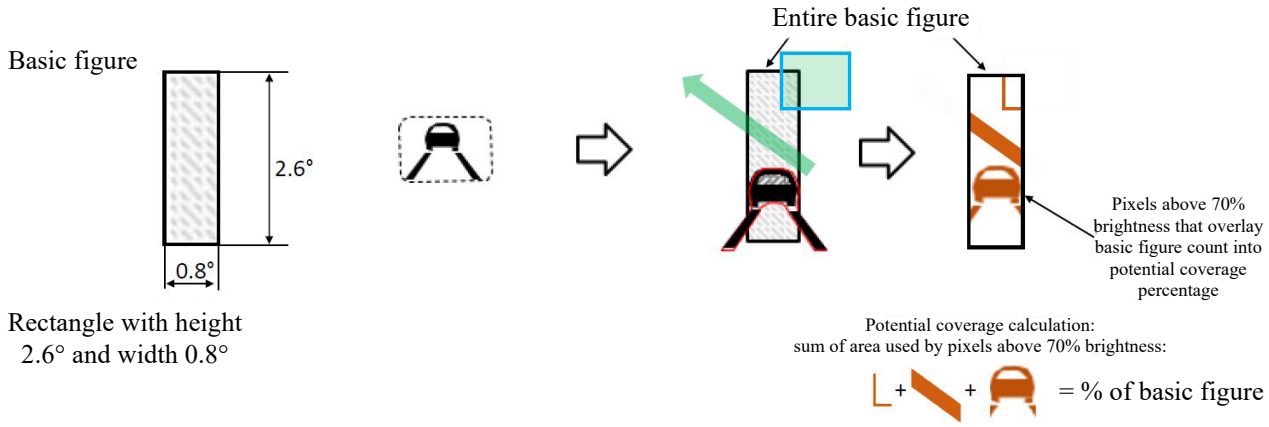
Annex 6

Coverage criteria according to paragraph 5.2.1.

~~How to verify:~~

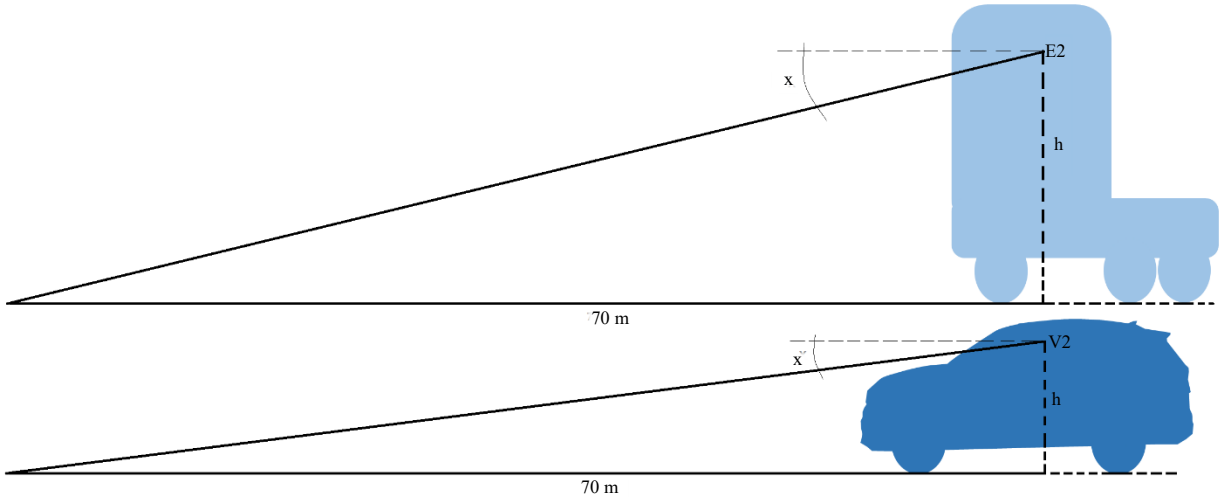
Calculate the ratio of the portion where the display region of each individual visual information item covers the basic figure to the entire basic figure (see below).

The basic figure should be checked everywhere within the transparent area of the windscreen.



~~Annex 6~~

~~Determination of the Value "X":~~



~~X = arctan (h/70)~~

~~With "X" in [°] and rounded to one decimal place (x.x °); "h" in [m] and rounded to 2 decimal places (y.yy m)~~