

# Backing event definition

15.1.1. Backing event starts when the vehicle is in Active vehicle mode and the vehicle's direction selector is placed from forward, park or neutral into reverse by the driver or a system, and ends when one of the following forward motion conditions, at the manufacturer's choosing, is met:

- (a) **A** a speed  $\leq 16$  km/h (**including** 0 km/h ~~is included~~), or
- (b) **A** a distance travelled  $\leq 10$  meters travelled ~~travelled~~ (**including** 0 meters ~~is included~~), or
- (c) **A** a continuous duration  $\leq 10$  seconds ~~seconds~~ (**including** 0 seconds ~~is included~~), or
- (d) the vehicle's direction selector is not placed in reverse.

# Detection Response time

## 17.3.1. Response time

At least one of the audible or haptic information signals that meets the requirements as described in 17.2., shall be **given signalled** to the driver **after within** a maximum of 0.6 seconds after the start of the backing event ~~, and~~ when tested according to **paragraph 2.** of Annex 10.

*Justification: it shall not be required to give a signal after max. 0.6s after start of the backing event when there is no object in the detection area.*

# RVC testing procedure

## Annex 9 1.2

(e) Place test objects G, H, and I so that their centres are in a transverse vertical plane that is ~~3.5~~ **3.35** m to the rear of a transverse vertical plane tangential to the rearmost surface of the rear bumper.

Justification: End of the 3<sup>rd</sup> row pole located at 3.5m. Therefore, pole center is located at 3.35m.

# RVC testing procedure

## **Annex 9 1.4 Test procedure (modification in red):**

The visibility of each pole shall be tested one by one.

Optional, one row can be tested at the same time.

After successful pole identification, the pole can be removed.

The poles of the first row (A, B, C) may rotate direction in order to be visible the painted patch as much as possible.

## **Motivation:**

-Getting clarity and avoid misinterpretation

-1.2 explains the test setup (location and orientation)

-Figure B shows all test objects location

-Potential interpretation by the technical service that the poles shall be identified one by one, but all 9 poles should be kept in the position.

-E.g depending on the camera mounting position, pole B can mask pole E and H, or pole E can mask pole H

# RVC response time testing procedure

Response time (2.0 sec) should be measured at normal temperature as it is in FMVSS 111:

S14.2. Image response time test procedure.

The temperature inside the vehicle during this test is any temperature between 15 deg. C and 25 deg. C.

# Wording

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Regulation

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## Introduction (for information)

The purpose of this Regulation is to provide the provisions for reversing motion concerning on awareness of vulnerable road users proximity. UN Regulation No. 46. provides the provisions for indirect vision of motor vehicles. This Regulation expands driver's vision or awareness for vehicle rear direction when in reversing motion. Therefore, some requirements of this Regulation may be satisfied by devices complying with UN Regulation No. 46.

*This Regulation cannot cover all the traffic conditions and infrastructure features in the type approval process; this Regulation recognises that the performances required in this Regulation cannot be achieved in all conditions (vehicle speed and condition, weather conditions, and traffic scenarios etc. may affect the system performances).*

### 16.1.1.3. Deactivation

The rear-view image shall remain visible during the backing event until either, the driver modifies the view, or the vehicle direction selector is no longer in the reverse position.

Modifying the view means to switch to any other camera views.

The driver can switch off the view when the vehicle is not moving rearward.

In case the vehicle can detect coupling with a coupling device, the system may be switched off.

**It is allowed not to show the rear-view image if the reversing speed exceeds [6 km/h].**

#### Justifications:

- 16.1.1.3: Original discussion based on max 6 km/h
- 16.1.1.3: To avoid driver distraction up to manufacturer strategy
- Introduction: robustness introduction similar to what was recently discussed in AEB or MOIS