EURO NCAP

#FORSAFERTRUCKS

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# Safe Driving
# Occupant Monitoring

# Test Protocol

Implementation November 2024

# PREFACE

During the test preparation, vehicle manufacturers are encouraged to liaise with the laboratory and to check that they are satisfied with the way cars are set up for testing. Where a manufacturer feels that a particular item should be altered, they should ask the laboratory staff to make any necessary changes. Manufacturers are forbidden from making changes to any parameter that will influence the test, such as dummy positioning, vehicle setting, laboratory environment etc.

It is the responsibility of the test laboratory to ensure that any requested changes satisfy the requirements of Euro NCAP. Where a disagreement exists between the laboratory and manufacturer, the Euro NCAP secretariat should be informed immediately to pass final judgment. Where the laboratory staff suspect that a manufacturer has interfered with any of the set-up, the manufacturer's representative should be warned that they are not allowed to do so themselves. They should also be informed that if another incident occurs, they will be asked to leave the test site.

Where there is a recurrence of the problem, the manufacturer’s representative will be told to leave the test site and the Euro NCAP secretariat should be immediately informed. Any such incident may be reported to the manufacturer and the person concerned may not be allowed to attend further Euro NCAP tests.

# CONTENTS

# DEFINITIONS

Throughout this protocol the following terms are used:

**Seat Belt Reminder (SBR)** – Seat Belt Reminder that indicates the status of the seatbelt whether it is in use or not in use

**Direct Monitoring** – Where driver state determination is supported by sensor(s) directly observing the driver.

# 1 INTRODUCTION

Driver inattention, whether through distraction or impairment by fatigue or alcohol, are widely regarded as being among some of the biggest factors contributing to the cause of road collision. The use of seat belts is also acknowledged as one of the biggest single thing a vehicle occupant can do to protect themselves in the event of a collision.

Heavy Goods Vehicles (HGVs) are no exception to these key safety facts, but the relative priority and importance can vary, as can the availability of technologies to address the problems. For example, the Volvo Trucks Safety Report (2017) suggests that 50 % of unbelted HGV occupant deaths are preventable with belt use. There is also evidence to suggest that belt wearing rates in HGVs remain less than for passenger cars. There are some explanatory factors for that, for example belt use became mandatory in HGVs later than for cars, drivers may feel less vulnerable and in need of restraint, and enforcement can be more difficult because of the elevated position of the driver.

Inattention is generally considered to be under-reported in police reported crash data, because it can be hard to prove. However, (Grover, Knight, & Dodd, 2020) found that in general the level of inattention as a contributory factor was less in HGV collisions than in passenger cars. Within that group of inattentive drivers, the type of inattention was also different. As may be expected, impairment by alcohol was less common among professional HGV drivers than the general population for car drivers, but fatigue was more commonly the cause of the recorded inattention. In police recorded crashes, around 8 % of fatalities were contributed to by inattention, but in earlier in-depth studies (Knight, Minton, Massie, Smith, & Gard, 2006) a figure of around 20 % was recorded.

Seat belt reminders and systems that attempt to identify patterns of tired driving from systems that measure input to the controls (steering, accelerator etc) or road position (e.g. lane support systems) are mandatory fitment for new vehicles. However, Euro NCAP aims to encourage a higher standard of performance above that of the regulation.

# 2 TEST PROCEDURE

## 2.1 Seat Belt Reminder

No formal test procedure is required for seat belt reminder. The Safe Driving Assessment protocol defines the assessment that the tester must make, which is primarily comparable to that required by UNECE Regulation No. 16 but with the principal additional requirements to:

- Ensure that the audible warning component is ‘loud and clear’
- Ensure that the duration of the audible warning is longer than required by regulation, provided the occupant has still not fastened their seatbelt

## 2.2 Indirect Driver Monitoring

No formal test procedure is required for indirect driver monitoring systems. The assessment protocol will be based on a dossier of evidence to be provided by the manufacturer, and similar to the evidence provided as part of type approval according to Regulation (EU) 2021/1341. The assessment protocol will aim to reward systems that:

- Exceed the minimum requirement for system sensitivity in true positive situations; and
- Exhibit a low number of false detections of driver inattention