



EUROPEAN NEW CAR
ASSESSMENT PROGRAMME

**EUROPEAN NEW CAR ASSESSMENT PROGRAMME
(Euro NCAP)**

**EURO NCAP ADVANCED
ASSESSMENT PROTOCOL**

Version 2.0
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1 INTRODUCTION

The ‘Euro NCAP Advanced’ approach seeks to improve the responsiveness of Euro NCAP to emerging technologies. Manufacturers are invited to present their innovations for assessment allowing Euro NCAP to offer an appropriate reward, and guide consumers towards safer cars, from an early stage. An independent organisation such as Euro NCAP must have a rigorous process to assess the innovations brought to it by the car manufacturers in order to ensure that it is offering meaningful, useful and unbiased information to consumers.

The assessment process was established by the ‘Beyond NCAP’ subgroup, and is updated after a couple of years of experience. This protocol defines the dossier that should be delivered to establish the reward, if any, that is appropriate to the innovation presented by a manufacturer.

It is the intention of Euro NCAP that, in the mid to long term, assessments of new technologies be incorporated into its overall rating scheme. Therefore, where several similar technologies have been considered through the ‘Euro NCAP Advanced’ process, Euro NCAP may consolidate the test methods demonstrated in those assessments into a single protocol. Future vehicles can then be assessed and scored against that test protocol.

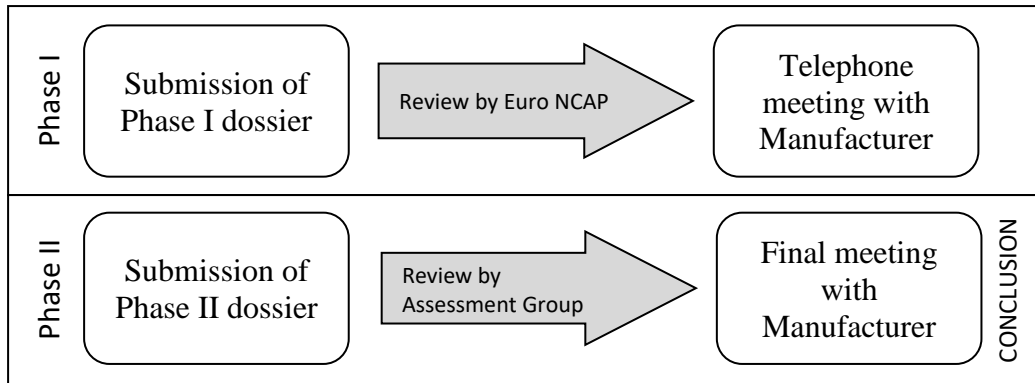
2 CONDITIONS

- 2.1 Euro NCAP will consider only innovations which are commercially available as optional or standard on a Euro NCAP tested vehicle model. To qualify, the minimum overall star rating for the vehicle (or vehicles) is 4 stars.
- 2.2 Euro NCAP will only entertain applications submitted by vehicle manufacturers. The system is not open to submissions from third parties, after market systems, prototype inventions etc. forwarded without consent of the vehicle manufacturer.

3 PROCESS OVERVIEW

- 3.1 To establish whether or not an innovation should be rewarded, Euro NCAP requires a comprehensive dossier describing the safety issue being addressed, technical details about the way in which the innovation works and details of the tests done to establish its effectiveness.

A two phased approach is used to assess the submission of the technologies.



In Phase I, the manufacturer must make an initial submission giving technical details of the innovation and the safety issue it is intended to address. This information is reviewed by the Euro NCAP Secretariat. The secretariat will make a decision whether or not the innovation is suitable for the Euro NCAP Advanced reward. If so, the manufacturer is requested to provide the Phase II dossier. The Secretariat may ask the manufacturer for additional information or for clarification of certain points before agreeing to proceed to Phase II.

At the end of first phase, the manufacturer may also decide to withdraw the submission, regardless of the outcome of the decisions of the Euro NCAP Secretariat.

- 3.2 In Phase II, the manufacturer must provide details of the ways in which the potential effectiveness of the system has been evaluated: the targets set for the system, the tests which have been performed to assess performance and the number of casualties the system could be expected to prevent. The full dossier, will be reviewed by an assessment group that is formed by Euro NCAP.
- 3.3 Details of the information required in each phase are given in this protocol, and in a excel template, which is available separately. **Manufacturers must** make use of the template when preparing their submissions to Euro NCAP. The templates are provided by the Euro NCAP Secretariat at the request of the vehicle manufacturer.
- 3.4 It is anticipated that an assessment may take around three months to complete. Therefore, if a Reward is sought for an innovation on a car to be assessed in the overall rating programme, manufacturers should ensure that submissions are made sufficiently early for the assessments to be completed at the same time.
- 3.5 When awarded with the Euro NCAP Advanced reward, it will be published on the website next to the applicable vehicle models. The publication and

publication date will be agreed with the manufacturer to ensure that technical details are correct. From the date of publication on the web page (and not before), the manufacturer may reference Euro NCAP's successful evaluation of the Innovation in advertising or other promotional material. Euro NCAP will make available to the manufacturer any appropriate logos/visual identities for use in promotional material. The use of the logo will be subject to Euro NCAP's publication guidelines.

If the innovation cannot be properly assessed, or if it is judged not to have been satisfactorily tested or evaluated, Euro NCAP will not publish any reference to the innovation on its website.

- 3.6 If a submission is successful and is rewarded, Euro NCAP will work with the manufacturer to prepare a 'desensitised' version of the submission dossier i.e. one which contains no confidential information. The Chapters Safety Issue and Expected Benefit (except sales numbers) will not be desensitised.

There will be no copyright or any other restriction on the desensitised dossier. Euro NCAP reserves the right to publicly refer to data from the desensitised dossier in order to demonstrate and promote the safety technology.

- 3.7 Where a manufacturer wants to extend the Euro NCAP Advanced Reward to another vehicle model or models, a separate dossier needs to be submitted to Euro NCAP. Parts of the original dossier may be reused, however all sections of the dossier which are model specific, including the expected fitment rate and test results will need to apply to the vehicle(s) to which the reward would be transferred.

4 PHASE I: INITIAL SUBMISSION

The aim of this phase is to establish an understanding of the Innovation and its potential for recognition by Euro NCAP on the basis of a sub-set of the total required information. The Phase 1 dossier will contain the following chapters, the contents of which are further detailed in the next paragraphs:

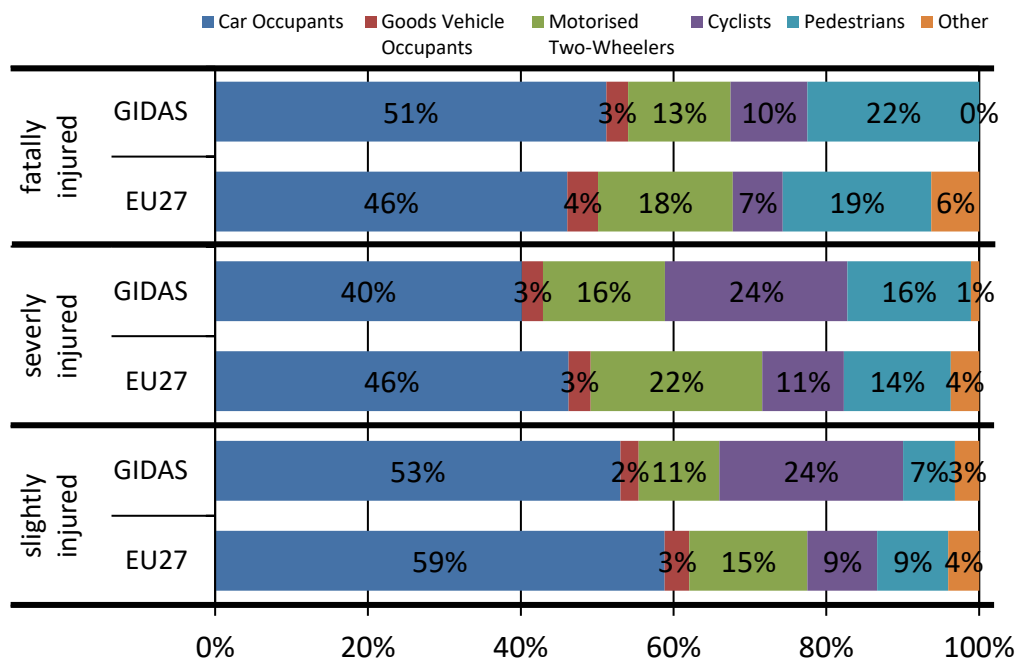
- 1) **INNOVATION:** whether it is a completely new technology or a new application of an existing technology; what restrictions there are on its use
- 2) **SAFETY ISSUE:** what is the safety issue which the innovation is seeking to address; whether the innovation prevents accidents or prevents or mitigates injuries in the event of an accident; the extent of the safety problem on European roads.

4.1 Chapter 1: Innovation

An extensive level of technical detail about the innovation, to fully understand its functionality, relevant components, and intended availability should be given in this chapter. In particular the car models to which the innovation is to be fitted (including model names and breakdown into variants) should be mentioned next to technical details like the warning sequence (including timing) and sensing system.

4.2 Chapter 2: Safety issue

The safety issue is the number of casualties who suffer from accidents or injuries of the identified type across Europe. To determine the safety issue, a dedicated GIDAS database containing the years 2005-2010 needs to be used. This dedicated database is assumed to be representative for the EU27, and an automatic scaling from GIDAS to the EU27 is included in the template.



As a first step, the manufacturer needs to select the scenarios from GIDAS which are applicable for the innovation. These scenarios need be detailed in the dossier. The result needs to be subdivided based on road type, city (urban), rural and motorway. This is called the problem at large and needs to be entered in the excel template by the manufacturer.

As a next step, the manufacturer needs to determine the safety potential from the problem at large. This is done by filtering the problem at large using the technical system limitations, like speed, overlap, lighting conditions etc. The filters applied need to be justified in the dossier. Again, the result is entered into the template, subdivided based on road type.

In addition to the required GIDAS analysis, manufacturers may include an alternative accident database and corresponding analysis in the dossier. The alternative analysis needs to be presented in the same manner as is required for the GIDAS analysis, so that an easy comparison can be made.

When a manufacturer does not have access to GIDAS, he may contact the following organizations to have the analysis performed:

Hannover University Prof. Dietmar Otte Karl Wiechert Allee 3 D-30625 Hannover, Germany Tel.: +49 511 5326410 Otte.Dietmar@mh-hannover.de	Dresden University Lars Hannawald Verkehrsunfallforschung an der TU Dresden GmbH Zellerscher Weg 24 Tel.: +49 351 43898920 hannawald@vufo.de
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5 PHASE II: DETAILED TECHNICAL ASSESSMENT

The aim of the second phase is to provide a detailed technical assessment of the Innovation. The possible safety potential established in Phase I needs to be supported by test results and other supporting information.

The Phase II dossier will contain the following chapters in addition to the Phase I part, of which the contents are further detailed in the next paragraphs:

- 3) **TEST PROCEDURES:** the way in which the innovation has been tested to establish whether or not it is meeting its targets.
- 4) **EXPECTED BENEFIT:** given the performance identified in tests, the Safety Potential of the Innovation should be updated.
- 5) **REAL WORLD EXPERIENCE:** information, if any exists, on how the innovation works in practice; whether or not a safety benefit can be seen in accident statistics.

5.1 Chapter 3: Test procedures and results

This chapter addresses the test procedures, criteria and limits by which the performance of the innovation was verified. The level of technical detail provided must be sufficient for Euro NCAP to understand under what circumstances and environment the system was tested, and whether state-of-the-art methods have been applied.

Euro NCAP will only reward innovations for which the validation methods, criteria and limits are well-documented, relevant and credible. For all systems Euro NCAP requires that the system performance has been independently verified. When timing does not allow testing to be performed by an independent third party before the launch or when special test equipment needs to be used, the manufacturer must contact the Euro NCAP secretariat to agree on the way forward. Preference is given to the use of open, accepted standards.

5.2 Chapter 4: Expected benefit

The dossier should clearly qualify the expected benefit that the innovation is finally able to deliver on a European scale. This expected benefit is based on the safety potential that was determined in the first phase.

This potential needs to be further multiplied with the ON-rate, RTA rate (ready to assist rate), HMI and any other factor influencing the real-life performance of the system. These multiplication factors need to be well supported by surveys, test results or other sources.

Additionally, it needs to be shown, by means of expected fitment rates, how widely available the innovation will be made available and what the actual impact of the system is.

These numbers also need to be entered into the template to calculate the final expected benefit the innovation is thought to offer.

5.3 Chapter 5: Real world experience

If available, the dossier should summarize the findings from real-world or simulated real-world evaluations. Examples are so-called field operational trials (FOT) or driving simulator studies, although the possibilities to generalize the conclusions in the latter case are limited. The most reliable real-world data source is the actual tracking of system performance using instrumented vehicles in the whole or parts of Europe. It is acknowledged that such studies however are rare and hard to perform. Consumer feedback can be reviewed as well.