

**Follow-up to recommendations ‘Who is in control?’ – Road safety and automation in road traffic**  
*Publication date of report: 28 November 2019*

**1. About this report**

The Dutch Safety Board conducted an investigation into the progressive automation in road traffic in relation to road safety. Based on this investigation, the Safety Board concluded that the risks of the introduction and use of Advanced Driver Assistance Systems (ADAS)<sup>1</sup> are not yet sufficiently known or managed. The introduction and use of these systems result in new types of risks. The Safety Board noted that ADAS systems, such as an emergency braking system or adaptive cruise control are not yet fully mature when they are placed on the market. This means that following admission for use on public roads, they undergo further development. Together with the lack of knowledge among drivers, situations can arise in which drivers fail to understand why the vehicle responds or fails to respond in a particular way. In addition, drivers in vehicles fitted with ADAS systems play a different role than in conventional cars, namely the role of operator. These automated systems makes drivers less alert and react later, although from a legal viewpoint, the driver is still responsible. The Safety Board also noted that automotive manufacturers had introduced further innovations whenever technology made this possible. The driver was not central to the design and introduction of ADAS. There was a mismatch between legislation and technology. For example, there are no regulations describing how the level of safety of ADAS can be assessed. Moreover, manufacturers and government had learned insufficient lessons from accidents involving ADAS.

To take control in the current hybrid situation, in which both machine and man are ‘in control’, it is vital that the automotive industry achieves a turnaround, towards responsible innovation. The central focus of that innovation must be that road safety is demonstrably improved. In other words, manufacturers must assess the risks of new innovations, and be transparent about the outcomes. Increasingly, manufacturers must take account of the role of humans, and the interaction between humans and machines. In addition, the learning capacity of the sector must be improved by learning from incidents and accidents and by actively including the experiences of users in future developments.

In this report, the Safety Board issued six recommendations aimed at removing these safety shortcomings. The parties to whom the recommendations from the Safety Board were addressed have responded.

This memorandum contains a general conclusion about the follow-up to the recommendations, followed by a brief summary of the responses received to each recommendation and a conclusion about how the recommendation has been followed up on. The full text of the reactions is available on the website of the Dutch Safety Board.

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<sup>1</sup> *Advanced Driver Assistance Systems* (ADAS) are driver assistance systems such as an emergency braking system or adaptive cruise control that support the driver in performing the primary driving task (steering, accelerating and braking).

## 2. General conclusion about follow-up

It should first be noted that since the start of the investigation 'Who is in control?' in May 2017, there have been clear improvements relating to the admission and use of ADAS, and as a consequence to road safety. During the course of the investigation, attention has shifted within the Ministry of Infrastructure and Water Management (hereinafter: I&W) from a focus on autonomous cars to a focus mainly on ADAS. I&W, BOVAG and the RAI Association have developed a number of initiatives in that framework, including the ADAS Covenant and the ADAS Alliance. Since the publication of the report, the RDW<sup>2</sup> has also been working on human factor aspects. The recommendations of the Safety Board have led to further acceleration and intensification of the existing initiatives and to actions. On the international stage, I&W has taken the lead, among others by placing the importance of human factors and responsible innovation on the agenda. Within the UNECE<sup>3</sup>, various working groups are considering these issues. However, it will still take some time to reach conclusive results, such as new regulations or an amended admission framework. The Safety Board is aware that this a long and extended process, in part because the international industry and sectoral parties play an important (but not decisive) role in the development of the international regulations.

The automotive manufacturers are responsible for any product they place on the market. The automotive industry, unlike for example the civil aviation industry, is not used to being subjected to investigation by an investigative body like the Dutch Safety Board. At the start of the investigation, therefore, contacts were difficult. Still today, the international sector organizations OICA<sup>4</sup> and ACEA<sup>5</sup> are reserved in their responses to the recommendations. In their responses, they have argued that automotive manufacturers and innovators in the automotive industry are working proactively to improve road safety, but they have failed to specify any concrete examples or initiatives. Moreover, OICA and ACEA refer directly to European regulations regarding the approval and supervision of motor vehicles and their systems, components and technical units, that must be complied with. However, in its report, the Safety Board concluded that current regulations offer insufficient guarantees for the safe (introduction of) ADAS. In particular with regard to human factors, the rules are lagging behind the rapid technological changes. Specifically for that reason, the recommendation was issued to OICA and ACEA to demonstrate that the development and introduction of ADAS are being carried out according to the principles of responsible innovation. As innovators, after all, they have a responsibility to the users and to road users in general. Car manufacturers must also be transparent about the way they innovate (safely) and share accident-related data. It is entirely possible that individual manufacturers have heeded this call and are innovating responsibly, but this has not been made clear to the Safety Board.

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<sup>2</sup> Also: Netherlands Vehicle Authority.

<sup>3</sup> UNECE stands for United Nations Economic Commission for Europe. The UNECE is a special UN commission that covers a large proportion of European regulations.

<sup>4</sup> Organisation Internationale des Constructeurs d'Automobiles.

<sup>5</sup> European Automobile Manufacturers' Association.

### 3. Follow-up per recommendation

#### ***Recommendation 1***

*To the automotive manufacturers and the umbrella organizations OICA and ACEA*

Demonstrate that the development and introduction of ADAS is taking place according to the principles of responsible innovation.

#### *Response from the OICA*

In an email message dated 22 January 2021, the OICA wrote that worldwide, automotive manufacturers are cooperating proactively to improve road safety. OICA underwrites and supports UN resolution 74/299 on 'Improving global road safety' dated 31 August 2020. OICA also emphasizes that the automotive sector is bound by strict domestic and/or regional legislation and regulations with regard to the certification and admission of ADAS. In addition, automotive manufacturers and scientific organizations have been collaborating for years on accident research. As a result, according to OICA, the automotive manufacturers have acquired a better understanding of the causes of (road traffic) accidents and the way in which vehicle systems can be improved.

#### *Response from the ACEA*

In its email message dated 26 February 2021, ACEA writes that immediately following the publication of the report 'Who is in control?', they contacted the Dutch Safety Board and members of RAI and FIA. They subsequently organized meetings in Brussels. The exchanges between the participants at these meetings were positive and fruitful, according to ACEA. ACEA also writes that its members are leading innovators in the automotive industry, and are committed to improve road safety in all areas. The aim of ACEA is to globally improve road safety and underwrites the UN resolution 74/299 on 'Improving global road safety' dated 31 August 2020. Finally, ACEA states that during the complex process of vehicle development, automotive manufacturers are bound by extremely high quality standards. To satisfy those quality standards, the vehicles and their components are exhaustively and intensively tested. In order to place the vehicles on the European market, they must satisfy the rules and standards as laid down in Directive 2007/46/EC and since 1 September 2020 in EU Regulation 2018/858.

#### *Conclusion on follow-up*

Both OICA and ACEA argue their willingness to work on improving road safety in line with UN resolution 74/299. However, neither organization's responses describe any initiatives or plans in more detail. They also refer to the existing European legislation and regulations on the approval and supervision of motor vehicles and their systems, components and technical units.

By merely referring in their response to the applicable legislation and regulations and stating that car manufacturers are bound by it, they do not comply with the recommendation from the Safety Board. After all, neither OICA nor ACEA demonstrate how – within this legal framework – car manufacturers work according to the principles of responsible innovation.

## ***Recommendation 2***

*To BOVAG and the RAI Association*

Ensure that BOVAG members fully instruct their customers on the possibilities and limitations of their vehicles equipped with ADAS. And make sure that BOVAG members are able to do this.

### *Response from BOVAG and the RAI Association*

In a joint letter dated 16 November 2020, BOVAG and the RAI Association responded to the recommendations of the Dutch Safety Board. BOVAG and the RAI Association explain that they both recognize the importance of the distribution chain issuing correct information about ADAS to buyers and vehicle drivers. This should be carried out at the moment of purchase of a vehicle, following handover and during maintenance and/or repair. In response to the report from the Safety Board, the activities already in place with regard to information provision will be continued and intensified, and if necessary, additional activities will be undertaken according to the BOVAG and RAI Association.

With regard to these activities, they write the following. The ADAS Covenant was drawn up at the start of 2019, as a result of collaboration between the RAI Association, the Ministry of I&W and other stakeholders since 2017. The aim of the Covenant is to increase awareness of ADAS and to promote the provision of information to drivers. The Covenant led to the establishment of the ADAS Alliance in June 2019. At present, the ADAS Alliance consists of 58 participants, all of whom have signed the Covenant and have submitted an action list aimed at further achieving the aims of the Covenant. In the spring of 2020, the participants were asked about the progress of their submitted actions. The responses to that request are currently being assessed by the Core Group ADAS Alliance, consisting of representatives of BOVAG, the RAI Association, I&W, ANWB Dutch car drivers' association, AON insurance brokers and the Dutch Association of Insurers (Verbond van Verzekeraars). The work of the Core Group includes communication to and guidance of the members of the ADAS Alliance, the use of uniform names for ADAS systems, the (possibility of) registration of ADAS, monitoring the growth of ADAS in the vehicle fleet and investigating the awareness and use of ADAS by the users.

At the end of January 2020, together with I&W, the RAI Association also took the initiative to enter into consultation with ACEA in Brussels. The aim was to find out what possibilities there are for collaboration between the three parties. The elaboration of the options discussed, such as establishing a European form of the ADAS Alliance, has been delayed by the COVID-19 pandemic.

On 15 May 2020, the RAI Association sent a letter to all members of the sections Passenger Cars and Light Commercial Vehicles and Trucks with an urgent request to place their dealers in a position to inform their clients fully and in good time about ADAS. A response to this letter was received from fifteen members.<sup>6</sup> A number of the reactions requested a form of 'ADAS guidelines' for brand organizations. Possibly in collaboration with the ADAS Alliance, the RAI Association believes it can play an important role in drawing up these guidelines.

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<sup>6</sup> The letter and a summary of the reactions from a number of members to that letter were provided to the Dutch Safety Board by BOVAG and the RAI Association.

Finally, BOVAG has carried out a series of surveys into (awareness of) ADAS in the retail sector (sales and damage repair, maintenance and repair) and among driving school owners and consumers.<sup>7</sup> In response to these surveys, at the start of 2020, BOVAG recorded an (instructional) video on the operation of various popular ADAS systems. The video was shared with the members and is also available on YouTube.

#### *Conclusion on follow-up*

BOVAG and the RAI Association have followed up on the recommendations. Both have launched a series of activities aimed at improving information provision about ADAS throughout the supply chain. In part, these activities are a continuation of initiatives already initiated prior to the report. The ADAS Alliance established in June 2019 could help to reinforce these initiatives. The RAI Association and the Ministry of I&W, together with ACEA, are also investigating the possibility of establishing a similar alliance at European level. In the opinion of the Safety Board, European cooperation in the field of ADAS and the provision of information about ADAS systems would represent an important step towards improved road safety. The true value of the ADAS Alliance and the underlying ADAS Covenant will become clearer, over time. It is vital that these efforts be continued to ensure that eventually all dealers in the Netherlands provide good-quality information about ADAS.

#### **Recommendation 3**

##### *To the Minister of I&W*

Take the initiative within the UNECE to place human factors and responsible innovation on the agenda.

##### *Response from the Minister of I&W*

In the letter from the Minister to the President of the Dutch House of Representatives dated 28 November 2019 (hereinafter: the letter), the Minister writes that the Netherlands will use its position as an active advocate of innovation in general and responsible innovation in particular to place these subjects on the agenda of international forums, including UNECE. The Minister further noted that many of the recommendations require an international effort and consultation with, among others, manufacturers and retailers. The Minister recognized the importance of moving forward rapidly with these efforts, since experience has shown this to be a time-consuming process.

In the policy reaction dated 13 May 2020 (hereinafter the policy reaction), the Minister writes that in the context of recommendation 3, the report of the Dutch Safety Board was explained to various working groups (in some cases by members of the Safety Board itself) and subsequently discussed. With regard to responsible innovation, these explanations contributed to broader support for imposing requirements on the design of vehicle (systems), according to the Minister. Specifically, discussions are currently underway on requirements that guarantee that systems are designed in such a way that incorrect use is prevented. With regard to human factors, the Netherlands has taken the initiative in establishing an

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<sup>7</sup> The most important surveys (with references to the full report) and conclusions are outlined in the letter.

international coalition of human factor experts. This coalition of experts submits their combined knowledge to the international development of regulations within UNECE for the development and admission of vehicles. The Minister also writes that under the UNECE flag, CBR and RDW are working together on an assessment model for vehicles with driver assistance systems. This assessment model will focus on how a driver uses the assistance systems and what is expected of the driver, at what moment. Finally, the Minister states that the Netherlands has contributed to the explicit inclusion of requirements on human factors in draft UNECE texts on vehicle admission. These drafts were examined by the Dutch Safety Board, after a request for access was submitted.<sup>8</sup>

#### *Conclusion on follow-up*

The recommendation has been followed up on by the Minister. In particular with regard to placing human factors on the agenda, important steps have been taken (for example) with the establishment of a coalition of experts in this field.

#### **Recommendation 4**

*To the Minister of I&W*

Support the initiatives of Euro NCAP to make human factors and consumer information about ADAS an integral part of the vehicle safety assessment (Euro NCAP star system).

#### *Response from the Minister of I&W*

In the letter, the Minister indicated that the Netherlands would support the initiative of Euro NCAP to include human factors and consumer information about driver assistance systems as an integral part of vehicle safety assessment.

In the policy response, the Minister supplements the above by stating the Netherlands is actively working within the board of Euro NCAP – of which it is a member – to place human factors as a crucial element of the safety of vehicles on the agenda and to make them part of the vehicle safety assessment.

#### *Conclusion on follow-up*

The recommendation has been followed up on by the Minister. Euro NCAP has since then developed special test and evaluation protocols for the assessment of ADAS for motorway use.<sup>9</sup> The assessment

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<sup>8</sup> The (draft) texts in question had already been drawn up when the policy reaction was submitted, as were (draft) texts for vehicle admission drawn up since the publication of the policy reaction, and in which human factors are explicitly included.

<sup>9</sup> For more information see: <https://www.euroncap.com/nl/veiligheid-voertuig/veiligheids campagnes/2020-rijhulpsystemen/wat-is-nieuw/> (last consulted on 16 June 2021).

of these systems includes a detailed consideration of driver assistance competence (which includes consumer information) and safety backups.

### ***Recommendation 5***

*To the Minister of I&W*

Improve the possibilities for learning from road traffic accidents in general and the role of ADAS systems in particular, and take measures aimed at improving road safety on the basis of the study results.

### ***Response from the Minister of I&W***

In the letter, the Minister confirms that identifying the role of driver assistance systems in road traffic accidents is hindered by the variety of systems and the inability to read out data from vehicles following accidents. Because this will have to be dealt with on an international scale, the Minister will bring this point to the attention of the European Commission and UNECE, among others.

In the policy response, the Minister states that in addition to existing accident records, the parties to the ADAS Alliance are examining whether the information made available to them, for example data from insurers, can lead to additional insights in this field. In addition, the Ministry is starting a study to identify which data from vehicles can be used to gain an insight into the operation of driver assistance systems. The necessary data will initially have to be supplied by the car manufacturers. With that in mind, the Minister has called upon the automotive manufacturers, the European Commission and all interested Member States to enter into discussions and to lay down agreements within which manufacturers supply anonymized information, that will then provide an insight into the use and operation of driver assistance systems. The Minister suggests that based on this approach, more factual knowledge will be established about safety effects and possibilities.

### ***Conclusion on follow-up***

The policy response demonstrates the intention to follow up on the recommendation, but shows that the recommendation has not yet been fully complied with. The policy response deals with the (im)possibilities of obtaining (additional) information over and above the existing accident records, on the basis of which a clear insight can be obtained as to how ADAS systems are used and how they operate. Although knowledge in this field is of clear value, it fails to sufficiently comply with the recommendation as addressed to the Minister. For example, no mention is made of (scientific) accident analysis, whereas this is an excellent method of learning from accidents. The research results obtained from such accident analyses could then be used as the basis for (new) measures for improving road safety.

### **Recommendation 6**

#### *To the Minister of I&W*

Within the European Commission, argue that vehicle regulations must tie in with the current generation of ADAS systems (SAE level 2 and lower). Responsibility for demonstrating that new ADAS systems improve safety must be placed clearly in the hands of the manufacturers. Moreover, in particular, focus attention on the introduction of requirements relating to human factors, user training, access to data from ADAS systems following accidents, and accident investigation by manufacturers.

#### *Response from the Minister of I&W*

With regard to recommendation 6, the Minister writes that it will be discussed with the European Commission how the recommendation to bring vehicle regulations in line with the current generation of ADAS systems can best be addressed at the European level in the short term.

In the policy response, the Minister writes that the Netherlands is in discussion with the European Commission on the further development of the admission system, so that the Dutch effort within the UNECE (as described above in recommendation 3) will also be laid down in European regulations as soon as possible. According to the Minister, this will be done through, for example, Dutch participation in the European Headstart project and Dutch input in the Joint Research Centre's (JRC<sup>10</sup>) research into new methods for admission. In support of contributions to international organizations, the Ministry, RDW, CBR and Rijkswaterstaat are working on the Vehicle Driving License Framework. The aim of this framework is to determine how automated vehicles and vehicle systems should be tested, with regard to driving ability.

The RDW has also developed a protocol for the assessment of the safety and (cyber) security of vehicles and vehicle systems, on the basis of process audits. Key elements of this protocol have already been adopted in the new UNECE regulations on Cyber Security.

Work is also being done on an integral testing methodology for driver assistance systems, involving knowledge, skills and capacities of the driver. In addition, ADAS systems are due to become part of driver training, so that new drivers are familiarized with the (im)possibilities of driver assistance systems.

In response to the above, the Dutch Safety Board asked an additional question relating to the applicability of the Vehicle Driving License Framework to the current generation of ADAS systems (SAE level 2 and lower). In its reaction, the Ministry of I&W stated that in principle, the project was initiated to describe the testing and assessment of vehicles that have technology of SAE level 3 and higher on board. However, a number of the aspects (in particular the process steps) from the project are also applicable to technology of SAE level 2 and lower.

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<sup>10</sup> JRC is the research institute of the European Commission.

*Conclusion on follow-up*

In order to comply with the recommendation, in collaboration with other parties, the Ministry of I&W has taken a number of relevant steps relating to the development of a new admission system. However, the focus of this new system seems to be mainly at vehicles with technology of SAE level 3+, while the recommendation is aimed at the current generation of driver assistance systems (SAE level 2 and lower). Leaving the current generation of ADAS out of consideration in the development of new admission policy creates a gap in vehicle regulation.