

# Proposals from the Informal Working Group on AEBS to amend UN R. No. 152

- 
- 00 and 01 Series amendments of UN Regulation
  - GRVA-2020-17 (Robustness of the system)
  - GRVA-05-35 (Amendment of corrigendum)

4<sup>th</sup> GRVA in September 2019:

Requirement for 2<sup>nd</sup> step of C2P → GRVA-2019-16

Amendments to existing regulation → GRVA-2019-17

**GRVA agreed to continue the discussions about  
“Repeatability of test runs” and “Car to Bicycle scenario”**



IWG meetings 10<sup>th</sup> meeting in Brussels (28-29 November 2019)

11<sup>th</sup> meeting in Paris (6-7 February 2020)



5<sup>th</sup> GRVA in February 2020:

Robustness of the system → **GRVA-2020-17**

**GRVA-05-35 ( Corrigendum)**

This presentation shows the proposal for  
**“Robustness of the system”**  
and the status report for  
**“Car to Bicycle scenario”**

**00 and 01 Series amendment of R152**  
**GRVA-2020-17 (Robustness of the system)**

**New amendments to UN R152  
(00 and 01 series)  
  
(GRVA-2020-17)**

**[6.10. Repeatability of test runs**

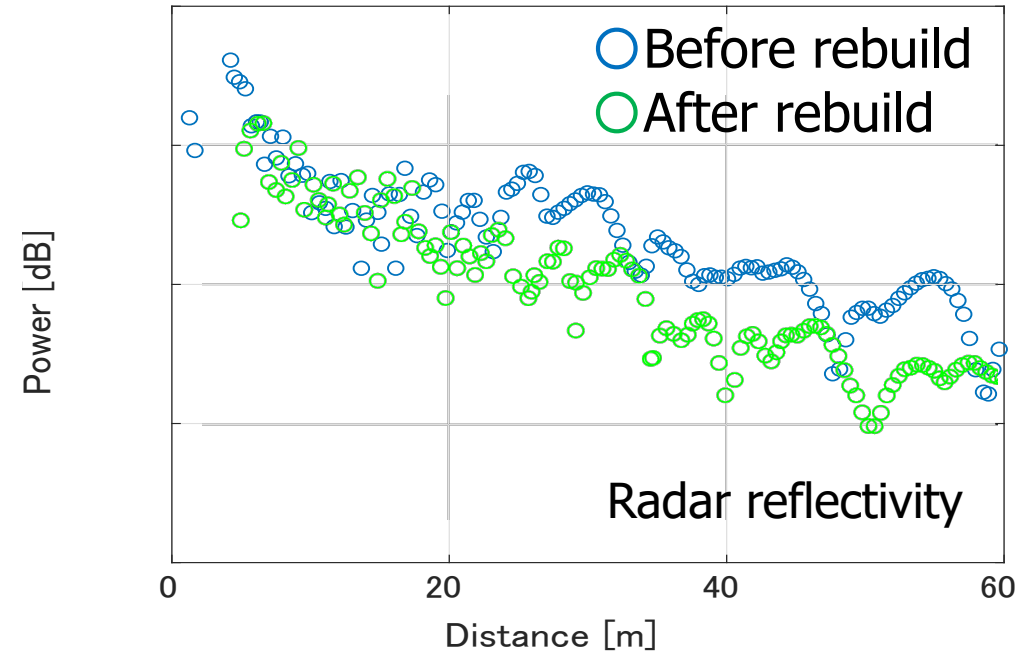
- 6.10.1. [Any of the above test scenarios [,where a scenario describes one test setup at one subject vehicle speed at one load condition] shall be performed two times. If one of the two test runs fails to meet the required performance, the test may be repeated once. A test scenario shall be accounted as passed if the required performance is met in two test runs. [The total number of failed test runs shall not exceed [10%] of all performed test runs of all Car to Car and Car to Pedestrian scenarios in all load conditions.]]**
- 6.10.2. The root cause of any failed test run shall be analysed.**
- 6.10.3. During the assessment per Annex 3, the manufacturer shall demonstrate via appropriate documentation that the system is capable of reliably delivering the required performances.]**



**OICA proposed “Repeatability of test runs” at last GRVA session (GRVA-04-11)  
GRVA ask to discuss further in the AEBS IWG.**



**DRI 3D target**



**Effect of target rebuild**



**Due to external influences it is difficult to ensure that every test run is performed under the same conditions.**

**Title:**

**“Repeatability of test runs”**



**“Robustness of the system”**

**Para. 6.10.1**

**Example of Detail:** Number of tests: Two times in each test conditions

No	First test	Second test	One more test (Either is NG)	Requirement
1	○	○	-	Pass
2	○	×	○	Pass
3	○	×	×	Fail
4	×	×	-	Fail

**Percentage of failed tests:**

**Para. 6.10.1**

The number of failed tests shall not exceed **10.0 %** in each scenario (Car to Car, Car to Pedestrian and [Car to Bicycle]).

**Investigation of the failure cause:**

**Para. 6.10.2**

The root cause of any failed test run shall be analyzed together with the Technical Service and annexed to the test report.



## Investigation of the failure cause:

Para. 6.10.2

If the root cause cannot be linked to a deviation in the test setup, the technical service may test any other speeds ~~for subject vehicle and target vehicle~~ within the speed range as defined in paragraph 5.2.1.3., **5.2.1.4.**, 5.2.2.3. or 5.2.2.4. as relevant.

Para. 5.2.1.3.

Test vehicle speed range:  
Between 10 km/h and 60 km/h



Para. 5.2.1.4. Requirement for M1

vehicle Speed (km/h)	Stationary/ Moving	
	Maximum mass	Mass in running order
10	0.00	0.00
15	0.00	0.00
20	0.00	0.00
25	0.00	0.00
30	0.00	0.00
35	0.00	0.00
40	0.00	0.00
42	10.00	0.00
45	15.00	15.00
50	25.00	25.00
55	30.00	30.00
60	35.00	35.00



**Technical service may re-test within the required speed range**

**Demonstration of system:**

**Para. 6.10.3**

During the assessment per Annex 3 (CEL), the manufacturer shall demonstrate via appropriate documentation that the system is capable of reliably delivering the required performances.



# **Car to Bicycle scenario**

The group still faces difficulty in agreeing on performance requirements for the car to bicycle collision given the lack of vehicles with this technology on the market. Consequently, the informal working group agreed to consider car-to-bicycle at a later stage, when more data is available.

## **Proposal to GRVA**

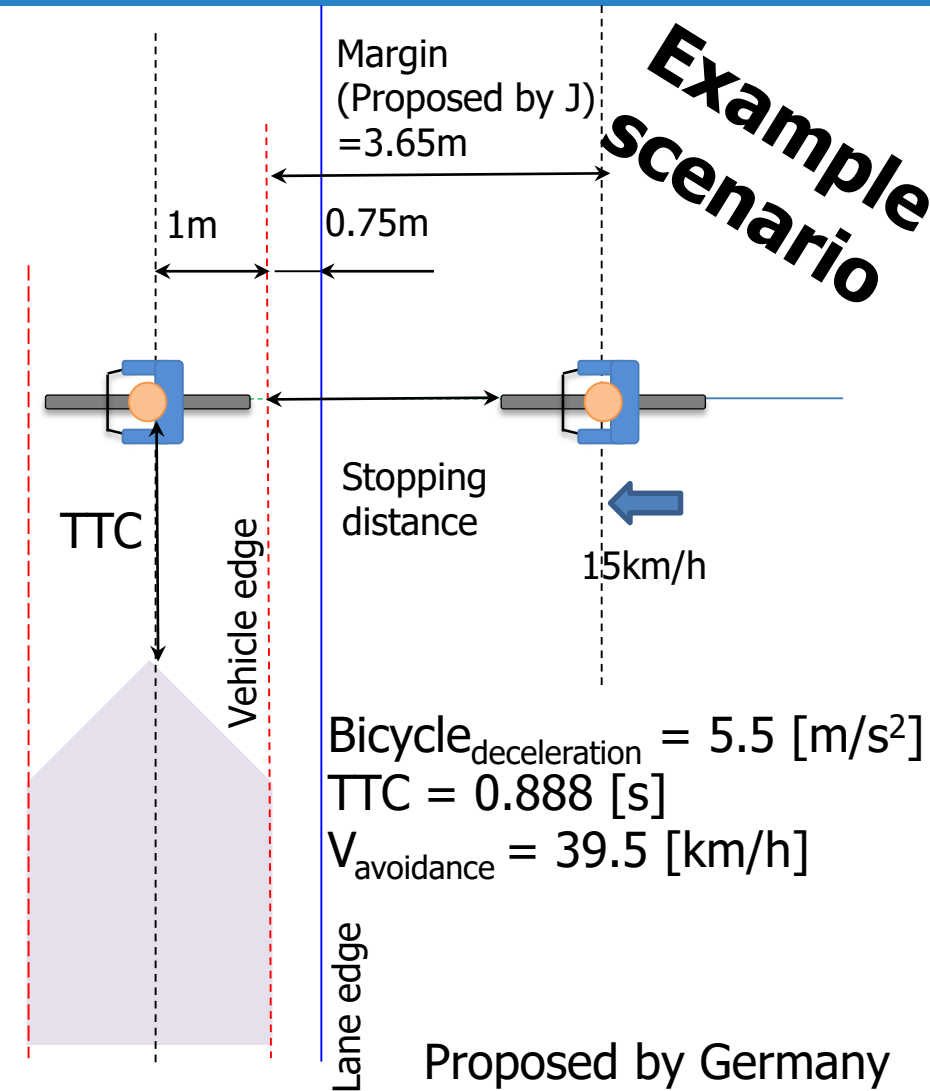
“GRVA agreed the extension of mandate to adequately address Car to Bicycle scenario (e.g. 7<sup>th</sup> GRVA - September 2020), when more data is available.”

- Scenario of C2B
- Accident data
- Euro NCAP
- Lower Speed (LS) of Ego vehicle  
LS = 20 km/h, LS = 35 km/h
- Reference point for requirements

*Further work still needed*

### Target:

**Proposal of working document for Car to Bicycle in Sep. session of GRVA (7<sup>th</sup> GRVA)**



# Thank you for your attention

**IWG meetings 12<sup>th</sup> meeting in Tokyo**

**(14-15 May 2020)**

**IWG meetings 13<sup>th</sup> meeting in [Brussels]**

**(25-26 June 2020)**