Submitted by the Expert from Italy.

Informal document **GRSP-74-04 Rev.1**

(74th GRSP, 04 - 08 December 2023, agenda item 23(h))

Proposal of Supplement 03 to the 06 series of amendments to UN Regulation No. 22 (Protective helmets)

The text reproduced below was prepared by the expert from Italy, aiming to introduce an alternative speaker simulator for helmet testing. The modifications to the current text of the UN Regulation **are marked in bold** for new or strikethrough for deleted characters.

I. Proposal

Paragraph 5.1.4.1.2.3.1. amend to read:

"5.1.4.1.2.3.1. For universal accessory ready helmet, an additional one or various of the following symbols if applicable, separated by a dash:

"UA" if the helmet is ready for universal accessories.

"S" or "S45":

"S" if the helmet has been tested with **rigid or deformable** speaker simulators of 40 mm diameter **as defined in Annex 20** or

"S45" if the helmet has been tested with **rigid or deformable** speaker simulators of 45 mm diameter **as defined in Annex 20**.

"M" if the helmet has been tested with microphone simulator **as defined in Annex 20**.

"F" if the helmet can install an accessory in the front side area.

"L" if the helmet can install an accessory in the side area.

"R" if the helmet can install an accessory in the rear area."

Insert new paragraph 1.4.2. to 1.4.2.1.2. in Annex 20, to read:

"1.4.2. Definition of rigid speaker simulator

1.4.2.1. Component and material specifications

1.4.2.1.1. Dimensions of rigid speaker simulator 40 mm

Diameter: 40 mm

Tolerance: +0-1 mm

Thickness: 8 mm ± 0.07 mm

Material: rigid plastic PA 6 Nylon 6

1.4.2.1.2. Dimensions of rigid speaker simulator 45 mm

Diameter: 45 mm

Tolerance: +0-1 mm

Thickness: 8 mm ± 0.07 mm

Material: rigid plastic PA 6 Nylon 6"

Renumber old paragraph 1.4.2. into 1.4.3.

Insert new point 14.1 under 14. in Annex 1A, to read:

"14.1 If S40 or S45, speaker dummy used for the homologation test deformable/rigid[2]"

Remark:

[2] Strike out what does not apply

II. Justification

1. In consideration of the difficulty in finding materials to create deformable simulators as specified in standard and with certified characteristics, we propose as an alternative the solution of a rigid plastic simulator with known characteristics, ease of construction and cheaper in relation to the overall cost of the tests.

   The entire test and verification of this alternative solution had been illustrated in the various sessions of the Ad Hoc Group and reported in the past also in the presentation report to this GRSP and evaluated as an alternative to the method already introduced in the Regulation (see informal documents GRSP-69-18 and GRSP-69-19).

   The solution with a rigid simulator guarantees similar or in some cases slightly more conservative results than the solution with a deformable simulator.