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Items 4.17.1 and 17.1 of the provisional agenda

1958 Agreement:

Proposal for amendments to Mutual Resolutions

Consideration of amendments to Mutual Resolutions No.1 (M.R.1) and 2 (M.R.2)

Proposal of Amendment 3, Addendum 1 to Mutual Resolution No. 1 (M.R.1)

Submitted by the Working Party on Passive Safety *

The text reproduced below was adopted by the Working Party on Passive Safety (GRSP) at its seventy-first session (ECE/TRANS/WP.29/GRSP/71, para. 33). It is based on ECE/TRANS/WP.29/GRSP/2022/10 not amended. It is submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Executive Committee (AC.3) for consideration at their November 2022 sessions.

* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (part V sect. 20) para 20.76), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



Paragraph 1.2.1., Table 1, amend to read:

"Table 1.

BioRID-II UN Instrumentation

		<i>Measurement</i>	
Location	Type	Required	Optional
Head	Accelerometer	AX	AY, AZ
Head	Tilt Sensor		Angle 2
Head	Angular Rate Sensor (ARS)		AVX, AVY, AVZ
Head	Contact Switch	Event	
Upper Neck	Load Cell	FX, FZ, MY	FY, MX, MZ
Lower Neck	Load Cell	FX, FZ, MY	
Thorax (T1) right	Accelerometer	AX, AZ	
Thorax (T1) left	Accelerometer	AX, AZ	
Thorax (T1)	Angular Rate Sensor (ARS)		AVX, AVY, AVZ
Thorax (T8)	Tilt Sensor		Angle
Thorax (T8)	Accelerometer		AX, AZ
Thorax (T8)	Angular Rate Sensor (ARS)		AVX, AVY, AVZ
Lumbar (L1)	Angular Rate Sensor (ARS)		AVX, AVY, AVZ
Lumbar (L1)	Accelerometer		AX, AZ
Lumbar (L5)	Load cell		FX, FY, FZ, MX, MY, MZ
Pelvis	Accelerometer		AX, AY, AZ
Pelvis	Tilt Sensor		Angle
Pelvis	Angular Rate Sensor (ARS)		AVX, AVY, AVZ

"

Annex I,

Paragraph 2.2.1., amend to read:

"2.2.1. Assembly Components

The BioRID-II UN dummy shall be equipped with the following neck instrumentation: an upper neck load cell measuring X, Y and Z forces and moments, a lower neck load cell at T1 measuring Fx, Fz and My, and two uni-axial piezoresistive accelerometers located on the right and the left side of the T1 vertebrae. If fitted, angular rate sensors may also utilize the accelerometer mounting on the cervical vertebrae."

Paragraph 2.2.2., amend to read:

"2.2.2. Mounting of Accelerometers

The T1 accelerometers shall be mounted on the sides of the accelerometer block and shall measure Ax and Az accelerations when the block is mounted on the spine. Two uni-axial piezoresistive accelerometers shall be mounted onto the tri-axial mount block with two each #0-80 X 1/8" SHCS (UNF) (4 total) such that their seismic masses point to one corner of the block as shown in Figure 71.

Accelerometers shall not be mounted on the cervical spine (C1 – C7)."

Paragraph 2.2.2., Figure 71, amend the title to read:

"Figure 71
Spine Accelerometer Mounting"

Paragraph 2.3.2., amend to read:

"2.3.2. Mounting of Accelerometers

Thoracic spine accelerometers, if fitted, shall be mounted only on the sides of the accelerometer block, and when mounted to the spine shall measure Ax and Az accelerations. Two uni-axial piezoresistive accelerometers shall be mounted onto the tri-axial mount block with two each #0-80 X 1/8" SHCS (UNF) (4 total) so that their seismic masses all point to one corner of the block as shown for the spine accelerometer mounting in Figure 71. This step is identical for T8 and L1 accelerometer locations."

Annex 3,

Paragraph 4.3.6., amend to read:

"4.3.6. Using the spine-torso interface pin holes in the jacket with the pin assemblies that came with the torso jacket assembly, install the jacket onto the jacket core (Figure 8a and 8b) and, using an attachment plate, attach the jacket and jacket core assembly to the impact plate of the sled. The combined mass of the test equipment system and the jacket impact attachment fixture is 55.75 +/- 0.08 kg (not including the jacket or the spine-torso interface pins)."

Paragraph 5.3.1., amend to read:

"5.3.1. Prepare the sled system and lower torso impactor as described for the jacket validation in paragraphs 4.3.1. to 4.3.3. above. In addition, the dummy equivalent mass package (Annex 3, Appendix.1, Paragraph. 1) shall be installed on the sled."

Paragraph 5.3.4., amend to read:

"5.3.4. Using the lower torso test fixture (Figure 10), attach the pelvis assembly to the sled impact plate with the posterior surface uppermost (Figure 11). The assembly includes all the components shown in Figure 12."

Insert new paragraph 5.3.5., to read:

"5.3.5. The combined mass of the test equipment system, the dummy equivalent mass package, and the impact attachment fixture shall be 75.35 +/- 0.10 kg."

Paragraph 5.3.5. (former), renumber as paragraph 5.3.6.
