

## **Proposal of amendments to WP.29-160-14 (Draft UN GTR on pole side impact)**

### **I. Proposal**

*In the text of Statement of technical rationale and justification (Part I)*

*Section D., amend to read:*

#### **"D. World side impact dummy (WorldSID)**

##### **1. Biofidelity**

34. The WorldSID 50<sup>th</sup> percentile adult male dummy (WorldSID 50<sup>th</sup> male) was developed by government and industry organisations and has demonstrated improved overall biofidelity when compared to the current test tools used in side impact testing. The WorldSID 50<sup>th</sup> male's expanded capability includes an improved shoulder range of motion and displacement measurement, more human-like shoulder and thorax motion, improved external oblique biofidelic response, and abdominal displacement measurement capability.

35. Currently the EuroSID 2 (ES-2) 50th percentile adult male dummy is used in pole side impact testing by a number of NCAPs, while the ES-2re 50th percentile adult male dummy is specified for use in the FMVSS 214 pole side impact test. However, both the WorldSID taskforce and NHTSA have conducted research that has shown the WorldSID 50th male to be considerably more biofidelic than the ES-2 and ES-2re. On the 10 point ISO TR9790 biofidelity rating scale, the WorldSID taskforce found the WorldSID 50th male to have a rating of 8.0, the ES-2 a rating of 4.7, and the ES-2re a rating of 4.2. Furthermore, the shoulder of the ES-2 dummy has a substantially lower biofidelity rating than the WorldSID 50th male. Shoulder design substantially affects dummy response during pole and side airbag interactions, while biofidelity is extremely important in narrow object crashes as the margins between minor and serious or fatal injury are relatively small <sup>15</sup>.

36. The informal working group regards the WorldSID 50th male as having major benefits as a test tool that should translate into superior countermeasures providing real world protection. The informal working group unequivocally recommends that the first phase of the gtr use the WorldSID 50th male as the anthropomorphic test tool.

##### **2. Preparing WorldSID for use as a regulatory test tool**

37. At the 151<sup>st</sup> meeting of WP.29 in June 2010, AC.3 agreed to the establishment of an informal working group on harmonization of side impact

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<sup>15</sup> Further details of the biofidelity evaluations conducted by the ISO WorldSID taskforce are available in ISO/DIS 15830\_1:2012 and Enhanced Safety of Vehicles (ESV) conference paper 09-0505. The WorldSID 50<sup>th</sup> percentile adult male and ES-2re biofidelity comparison conducted by NHTSA is summarized in ESV conference paper 09-0563.

dummies chaired by the United States of America, with the primary focus of the informal working group being to ready the WorldSID dummies for use as regulatory test tools. This coincided with AC.3's agreement to the establishment of the informal working group for the gtr on pole side impact; and as intended by AC.3, the two groups have worked in close conjunction with each other.

38. At the 158<sup>th</sup> meeting of WP.29 in November 2012, AC.3 adopted a proposal for a Mutual Resolution (ECE/TRANS/WP.29/2012/124, as amended by WP.29-158-19), to manage drawings, calibration and maintenance procedures associated with test tools referenced in UN Regulations and gtrs.

**39. Addendum [2] of Mutual Resolution No. 1 (M.R.1) is reserved for the technical specifications of the WorldSID 50th male, including detailed engineering drawings, certification requirements and procedures for assembly/disassembly. Part II of the gtr therefore includes references to Addendum [2] of M.R.1. For each of these references, square brackets are used to denote that this addendum is under development and hence yet to be adopted by AC.3. It is intended that the informal working group on the Harmonization of Side Impact Dummies will seek to finalise an agreement with ISO for the availability of technical specifications of the WorldSID 50<sup>th</sup> male in Addendum [2] of M.R.1.**

*Paragraphs 39 to 153 (former), renumber as paragraphs 40 to 154.*

*Insert a new paragraph 155, to read:*

**"155. It is also recognised that Contracting Parties may vote to adopt the gtr, into the Global Registry but not be obliged to submit the gtr to the process used for adoption into its national regional law until Addendum [2] of the Mutual Resolution No.1 is adopted."**

*In the text of Regulation (Part II)*

*Paragraph 4.1., footnote <sup>3</sup>, amend to read:*

<sup>3</sup> Technical specifications, including detailed drawings and procedures for assembly/disassembly of the WorldSID 50<sup>th</sup> percentile adult male dummy are specified in Addendum [2] of ~~the Mutual Resolution No. 1. Until Addendum [2] of the Mutual Resolution is adopted, drawings and procedures are available from ISO, Geneva, Switzerland.~~

*Annex 1*

*Paragraph 3.3.1., amend to read:*

"3.3.1. A WorldSID 50<sup>th</sup> percentile adult male dummy in accordance with Addendum [2] of ~~the Mutual Resolution No. 1~~ and fitted with (as a minimum) all instrumentation required to obtain the data channels necessary to determine the dummy performance criteria listed in paragraph 4.2 of this regulation.<sup>1</sup>"

*Paragraph 3.3.1., footnote <sup>1</sup>, amend to read:*

<sup>1</sup> Addendum [2] of ~~the Mutual Resolution No. 1~~ is under development. ~~Until Addendum [2] of the Mutual Resolution is adopted, ISO 15830 certification, assembly and disassembly procedures for the WorldSID 50th percentile adult male dummy may be obtained from ISO, Geneva, Switzerland. Engineering drawings are available from ISO at [standards.iso.org/iso/15830](http://standards.iso.org/iso/15830). For progress on the development of Addendum [2] to the Mutual Resolution No. 1, refer to the UNECE Working Party on Passive Safety (GRSP) website, Palais des Nations, Geneva, Switzerland.~~

## Annex 2

Paragraph 2.5., footnote <sup>1</sup>, amend to read:

" <sup>1</sup> Details of the H-point locator assembly (H-point tool) including drawings and dimensions are available in Addendum [2] of the Mutual Resolution No. 1. ~~Until Addendum [2] of the Mutual Resolution is adopted, these details are available from ISO at [standards.iso.org/iso/15830](http://standards.iso.org/iso/15830).~~"

## II. Justification

At the fifty-third session of GRSP, ECE/TRANS/WP.29/GRSP/2013/7 as amended by Annex II of the report was recommended to be submitted to the World Forum for Harmonization of Vehicle Regulations (WP.29) and to the Executive Committee of the 1998 Agreement (AC.3) for consideration and vote at their November 2013 sessions.

GRSP noted that a proposal for Addendum [2] to M.R.1 would be submitted at a later stage to GRSP and to WP.29 and AC.3 for adoption. GRSP agreed, as a temporary solution, to include references to ISO for the technical specifications of the WorldSID 50<sup>th</sup> male. However, reservations have since been raised regarding this approach and discussed with the Chair of the informal working group on Pole Side Impact. To enable the adoption of this UN GTR at the November 2013 session of AC.3, the secretariat therefore proposes the following:

- (a) insertion of a new paragraph 39 in Part I of the GTR, to clarify that the informal working group on the Harmonization of Side Impact Dummies would work after the adoption of the UN GTR to finalize an agreement with ISO on the free availability of specifications for the WorldSID 50<sup>th</sup> percentile male in Mutual Resolution No. 1; and
  - (b) deletion of the references to ISO in Part II of the GTR.
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