

Informal document GRSP-75-07  
(75<sup>th</sup> GRSP, 27-31 May 2024  
agenda item 20)

# Equitable Occupant Protection IWG, report to the 75th session of GRSP

Chair: Pernilla Bremer

Co-chair: Corina Klug

Secretariat: Torbjörn Andersson, CLEPA  
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# Strategic goals

- Equitable and enhanced protection of a diverse population.
  - Passenger car occupants given priority.
- Robust, inclusive and effective regulatory solutions
  - For protecting a diverse population in an equitable way.

# EqOP Approach

## 0.) Field data study



Identify which loading scenarios in the field cause significant differences in injury risks for different groups of the population and review how those are currently assessed in regulations



- gender
- age
- body height
- BMI / body weight

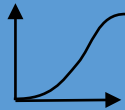
## 1.) Use available tools (already currently used in regulations) to address problems identified in 0.)

Change wordings in regulations

Change requirements in regulation with available tools:



a) Change what is required / voluntary?



b) Change injury criteria



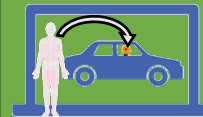
c) Change test conditions (speed, barrier, angle...)

## 2.) Use alternative test tools to address problems identified in 0.)

Which injury mechanisms can be predicted additionally compared to currently available tools, where problem in the field are observed?



Which alternative physical test tools are suitable for this?



What can be simulated what currently can't be tested?

# Agreed task forces

1. TF Drafting Team for the Report on equity issues: continue to work on the worktable and draft written report.
2. TF on rear impact seat assessment with focus on soft tissue neck injuries (whiplash associated disorders)
3. TF on Virtual Crash Testing
4. TF on restraint system requirements
  - a. Geometric requirements for seatbelt
  - b. Dynamic requirements / system performance
5. TF on extension of assessments towards currently not considered injury types with high frequency and risk of PMI
  - a. Lower extremity injuries in frontal and side impacts
  - b. Upper extremity injuries in frontal and side impacts
  - c. Brain injuries in frontal and side impacts
  - d. Soft tissue neck injuries in frontal and side impacts

# Following tasks important in most task forces

- Reviewing research
- Close collaboration with industry, other working parties, and research for filling knowledge gaps
- Review of concerned regulatory requirements
- Explore opportunities to improve robustness of concerned regulations
- Prioritization based on relevance of the injury

# Task force 1 – Report on equity issues

- 2 meetings
- The worktable still open to add studies
- The report will focus attention on injury studies – not recommend priorities. That will be done in the IWG
- Timeline 12-18 months
- Aim for a full report and a journal version
- Present at ESV 2026
- Next meeting in June

## Task force 2 – Rear impact assessment

- 3 meetings
- NL drafted proposal for R17 – to address the issue that was presented at latest GRSP.
- Clepa presented an issue at last GRSP – geometrical check proposed as informal document
- Planning for workshop in Stockholm at 10-17 on 9th of September
  - Assess even seatback / make sure that there are no local hardnessess
  - SETs

# Task force 3 – Virtual testing

- 4 meetings
- Discussion on using 4 possible procedures ([EqOP-TF3-03-02e - 2024-02-07-TF-VCT-WS3](#)):
  - Option 1 & 2: the OEM's vehicle simulation model
  - Option 3 & 4: a generic vehicle simulation model calibrated to a specific car
- TF agreed that
  - generic model-based approaches should be seen only as a back up if OEM models are not available (either processed at OEMs or at authority/technical service).
  - it will be difficult to replicate the necessary behavior of the vehicle relevant for type approval with the generic model, which is why the usage of the detailed models is preferred (Option 1 & 2).
  - **the focus of further discussions will be therefore the Options 1 & 2**
- Next step: define the load cases for which **virtual crash testing as a method** is investigated applying Options 1 & 2
- Next meeting on the 29th of August 13:00



# Task force 4 – Restraint system requirements

- Planned to start autumn 2024

# Task force 5 – Extension to new injury types

- First meeting on 11th of June at 12-14

# Next meeting of IWG EqOP on 10th of Sep

- Discuss and reflect on how to apply the WP.6 "Gender responsive guidelines" in the different task forces.
  - <https://unece.org/trade/publications/guidelines-developing-gender-responsive-standards-ecetrade472>
- Decide the loadcase for which proof of concept of virtual crash testing is further investigated in task force 3.