

UNECE GRSP IWG Equitable Occupant Protection (EqOP) Task Force 2 – Rear-end impact

Draft minutes of the ninth meeting.
On-line meeting, November 06, 2025.
25 participants.

Adoption of the agenda

Adopted.

Approval the minutes from last meeting

Approved.

Presentation

The expert from Sweden (VTI) gave a presentation regarding a research project with Euro NCAP 16 km/h tests, using the Seat Evaluation Tools (SETs), in both Saab 9-3 and Audi A4 seats, to assess injury protection performance. The research project included a validation test series with eight volunteers and referred to the risk of permanent whiplash injury derived from Folksam injury data for both males and females in the tested car models. See the Swedish experts presentation for more details. The discussion opened with a question what makes a seat good or poor and whether seat performance in protecting against soft tissue neck injuries can be distinguished by static tests. The Swedish expert noted that she hasn't been able to identify an easy way to determine whether a seat is good or not. In addition, she noted that this is likely not feasible with static tests and highlighted dynamic testing with human surrogates, especially using two different sizes, as a practical approach to balance performance across occupant variability. Static tests are obviously insufficient for detailed neck loading assessment. Moreover, it was clarified that the Seat Evaluation Tools (SETs) measure accelerations only, unlike BioRID which captures forces and displacements. However, SETs are expected to evolve and incorporate additional metrics. Participants also noted that the seats used in the study were older models. While this limits relevance to current designs, the advantage lies in the availability of field data, including risk estimates for permanent medical impairment (PMI), which are not yet available for newer seats. The FE SET v0.2 will be released on November 27 at OpenVT.eu.

Recap

The chair summarized prior discussions on rear impact assessment, noting that injury risk has declined overall but remains higher for females particularly regarding soft tissue neck injuries. Current test protocols may not reflect real-world outcomes – IIHS has previously presented that insurance rate claims show that there is a significant difference between “Good” rated seats in the field. The tests that they perform do not reflect what they see in the real world when it comes to insurance claims. Geometry-based assessments alone may be insufficient. The dynamic test alternative is better aligned with real-world crashes, but unfortunately underused. The chair stressed that seatback performance depends on the entire structure and that minimizing spine movement is key to reducing whiplash. New headrest designs may be needed, as occupants often leave them in the highest position. Future research should prioritize dynamic tools to enhance energy absorption across the seat. See the chair's presentation for more details. The group revisited the topic of seatback stiffness and backset in relation to UN R17 after the chair recap. It was noted that while the

regulation sets a minimum stiffness via static testing, it does not define an upper limit. The CLEPA expert reminded us that an updated regulatory requirement is forthcoming. Referencing the IIHS protocol, the CLEPA expert suggested that vehicle rating programs may be more effective and faster in driving safety improvements, given the complexity of seat design. The chair emphasized that regulations remain foundational, as they set the baseline, shape safety performance and hold up rating protocols. She also stressed that inclusiveness is a core requirement for regulations. The German expert highlighted the value of testing new seat models with SETs, considering whiplash injury claims, building on the approach used in the VTI research project. CLEPA agreed in principle and noted that implementing such testing would require a few months to a year, but not decades, once a decision is made. The German expert also mentioned that we might need more research and that it might be fruitful to research methods to evaluate energy absorption and equal load distribution, and that the whole seatback is important for the components performance. The discussion returned to whether dynamic testing should become mandatory. The CLEPA expert noted that applying dynamic tests to all seat variants would impose high administrative and testing burdens. The chair proposed that this question, whether we should have mandatory dynamic testing or not, should be explored further in a dedicated in-person workshop in 2026. The chair requested participants for a planning team for the workshop and did thereafter, after a short discussion about the planning, close the meeting. The chair will reach out to those who have volunteered to participate in the planning team.

Next meeting

Not discussed. Date TBD through poll.