Real life side impact evaluations and model development for virtual prediction of current and future side restraint systems

This project aimed to, based on real life data, evaluate how occupants are injured in side impacts when they are travelling in a modern, side airbag equipped car. It also aimed to evaluate the most modern tools for assessment of injuries in side impact using the WorldSID and the THUMS.

**MÅL:** The primary result of this project is knowledge of the current restraint benefit, not only from older vehicles that can be found in the real-life crash databases but also for present safety standards and potentially future vehicle and restraint designs.

**RESULTAT:** Brain injuries, rib fractures, lung injuries and pelvic fractures should be further assessed to reduce side impact injuries. With increased active safety systems, better preventing high severity crashes in the future, side airbag performance in intersection crashes, especially for senior occupants, will gain importance. The introduction of WorldSID in EuroNCAP provides opportunities for improved protection systems in near- and far-side impacts. As a complement to physical tests, evaluations using human body modelling is needed to ensure good occupant protection in a wider range of crashes. However, that require further development of injury criteria, and corresponding injury risk curves, to the THUMS (or other human body model).

**PROJEKTBESKRIVNING:** Field data analysis in combination with accident reconstructions and sled tests, physical and numerical, was used to identify relevant injuries and how these can be assessed in modern cars of today and in the future.

**FINANSIERING:** Total budget för projektet uppgår till 9 miljoner kronor varav 4.6 miljoner kronor i bidrag från FFI.

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