

Euro NCAP 2012 - New Challenges for Occupant Protection Simulation

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From February 2009 Euro NCAP (European New Car Assessment Program) has introduced a new overall safety rating for cars. This revised rating with a maximum award of five stars shall take real life safety more into consideration and provide consumers with a plain overall assessment of the safety performance of the most popular cars sold in Europe. The requirements to get a five star rating become more stringent every year up to 2012 and follow an annual stepwise increase ('safe landing').

This means that cars which are awarded today with 5 stars may be rated as poor in 2012. The new rating is made up from scores in four areas of assessment: adult occupant, child occupant, pedestrian protection and a new area, 'safety assist'.

Besides these stricter criteria, Euro NCAP is anticipating adding new procedures in areas currently not covered and updating existing procedures where necessary.

For Passive Safety development this means an expansion of the load cases which have to be considered. In frontal crash the Q6 and HIII 5th ATDs in the second seat row have now to be taken into account. For side crash the WorldSID 5th and Q6 ATDs must be incorporated.

The objective of this presentation is to show CAE strategies and methods for occupant simulation with LS-Dyna which are necessary to achieve Euro NCAP's maximum five stars in future.

Keywords: Frontal Crash, Side Crash, WorldSID 5th, Child Safety, Child Seat Assessment, Child Restraint System (CRS, Child ATD Q-Series), Reverse Engineering Data

