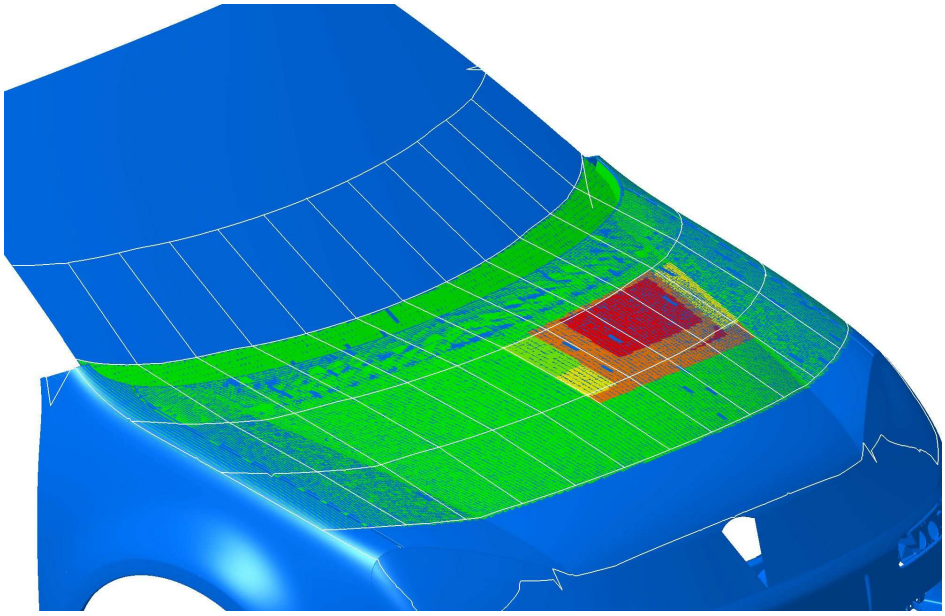
Concept ® - Pedestrian Positioning and Analysing- Tool (PPA-Tool)



Application:

The topic pedestrian protection is currently a highlight in the area of vehicle safety.
Presently there are many different regulations regarding the determination for the appropriate testing area of an adult head, small adult head, child head, legform and upper–legform. In order to determine the appropriate testing fields and possible impact configurations based on 3D styling-surfaces or CAD-data from the beginning for a pedestrian protection development, CONCEPT developed a „Pedestrian Positioning and Analysing - Tool". Furthermore, the calculation of the „critical distance", allows a first worst-case estimation and evaluation of the vehicle front.

Features of the PPA-Tools:

- Generation of all test fields for the corresponding regulations (european regulation: 2003/102/EC, 2004/90/EC, EuroNCAP and japanese regulation Article 18; TRIAS 63-2004).
- Analysing and evaluation of the available space in the area of head impact – „critical distance"
- Support of Determination for the EuroNCAP Star-Ratings based on test results out of FE- Simulation or Hardware testing
- Illustration of input and output in a 3D-Viewer for visual inspection
- Mode of operation with neutral data format – working with CATIA, Unigraphics, etc.
- This application is installed on one central server and can be used via a web-browser – for the client computer there is no loading and so you have high performance.

Further realized steps:

„Critical distance" for the respective field of head impact and the appropriate head positioning, which is displayed as a transformation card for FE-Simulation.

Benefits at a glance:

- ✓ Quick definition of the relevant areas of impact (about 5-60 min, depending on model size).
- ✓ Compliance of all legal requirements, as well as optimisation of the EuroNCAP Star-Rating
- ✓ Illustration of results in a 3D-viewer or in a CAD-program
- ✓ Analysis of different hight of the vehicle because of different tires or motorisation per definition of the groundlevels
- ✓ First estimation of possible worst-case configurations already takes place before the FE-simulation

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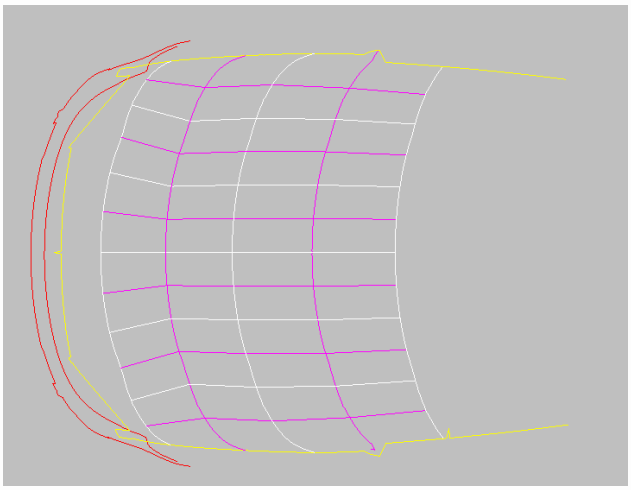
Workstations:

- As many licenses as required can be allocated. The software can be used irrespective of the CAD system with a web-user interface.

Example: EuroNCAP test area



Example critical distance illustration

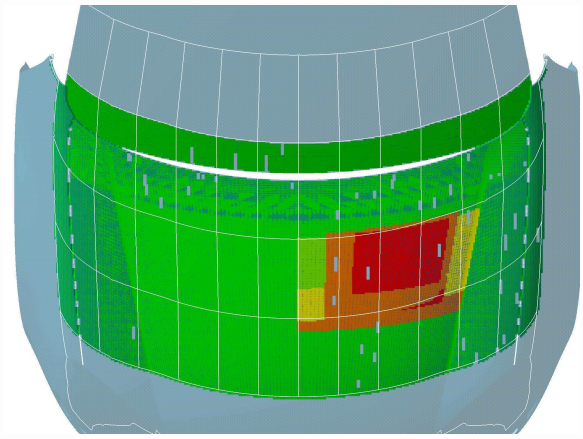


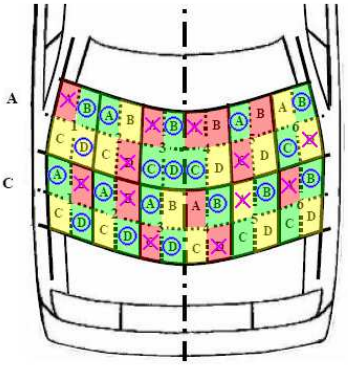
Illustration of the critical areas of the head impact

EURO NCAP

16.99 Points

EuroNCAP Star-Rating incl. optimisation for additional nomination

Headform



Points:

A1 = 0.71	C1 = 1.00
A2 = 0.50	C2 = 1.00
A3 = 1.50	C3 = 1.00
A4 = 0.50	C4 = 0.50
A5 = 0.50	C5 = 1.00
A6 = 1.33	C6 = 0.50
Adult = 5.04	**Child = 5.00**

Total = 10.04