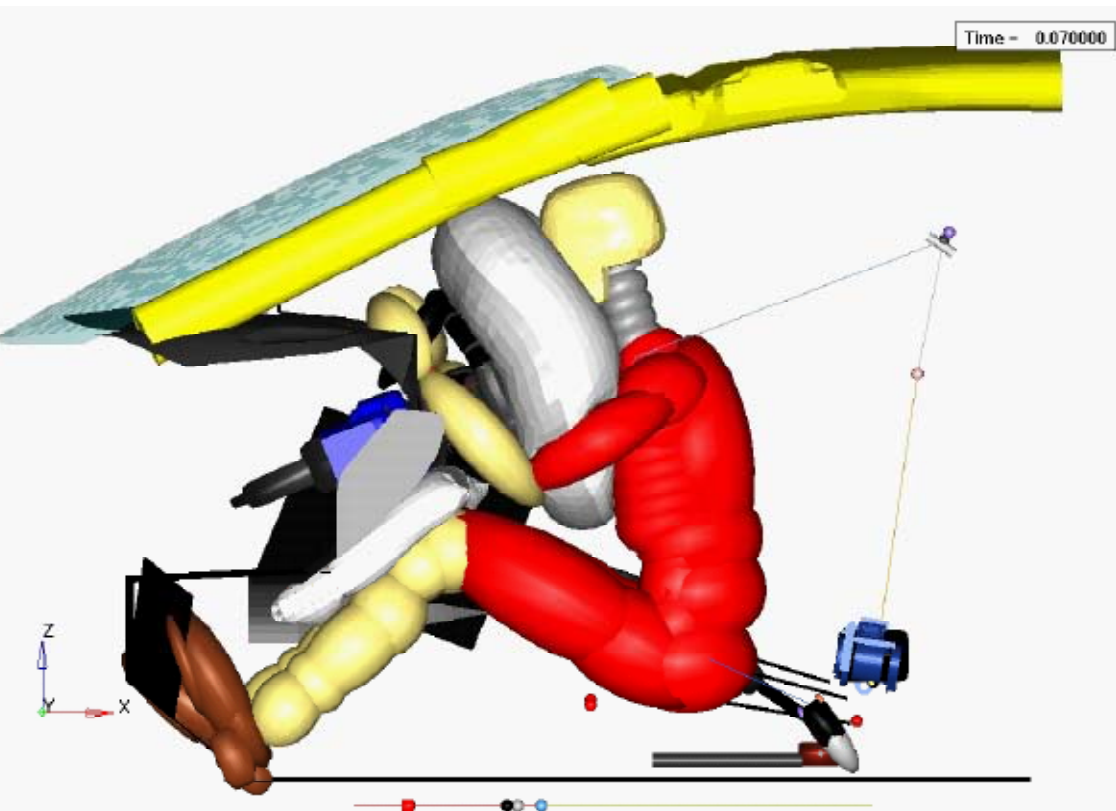




AUTOMOTIVE OPEL

CASE STUDY



Driven model - 50th - KAB

OPEL: Snap decision

"Big car makers are getting comfortable with the use of crash test simulation to validate their safety system designs; now the same tools are playing an important role at the concept stage."

DESCRIPTION

By introducing crash simulation at the very earliest stages of design, before any but the most basic vehicle parameters have been established, leading car makers are making more robust, cost effective safety systems decisions. European General Motors subsidiary Opel has pioneered this approach, working with safety simulation specialist TASS.

VALUE

One key application for early design stage simulation is in deciding whether high-cost additions such as extra airbags are likely to be required to allow vehicles to meet the safety requirements of all its target markets, or whether the geometry and stiffness of the vehicle can be designed to offer the occupants sufficient protection without the additional components. Every extra safety system is likely to eat into the profit margins for the vehicle, but introducing a new component early in the programme is much more effective than having to integrate one later after a crash test failure.

In a recent project a European OEM worked with TASS on just such a problem. The car maker had to decide if a knee airbag would be required to offer the driver adequate lower leg protection in the event of an accident. Over a period of one month, TASS ran a series of MADYMO simulations using different crash conditions and occupant characteristics.

FINANCIAL BENEFITS

With the help of the MADYMO simulations executed by TASS, the Opel engineering team was able to deliver a design that fulfilled the intrusion and stiffness requirements without the additional knee airbag. This decision not only saved several hundred Euro's per vehicle in production costs, it also helped to simplify control, maintenance and end of life dismantling.

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For more information, please visit us: www.tass-safe.com

For more information, please contact:

TASS HEADQUARTERS
Schoemakerstraat 97
2628 VK Delft
The Netherlands

T. +31 888 277 000
F. +31 888 277 003
E. info@tass-safe.com
www.tass-safe.com



tass
beyond safe