MADYMO Top Use Cases

Crash & Safety Software by TASS-International

Aircraft Seating Arrangement

Challenge
Each new airplane seat layout requires demonstration to prove there are no head impact conditions, or that any head impacts result in HIC values below 1000, traditionally accomplished through testing.

Solution
Test impacts potentially endured with MADYMO's world-class occupant model portfolio to analyze dummies and ensure the metrics fall within range to maintain survivable volume, restrain occupants within survivable volume and limit occupant loads.

Results
Save time and cost in developing and certifying new seat layouts while reducing risks on seat installation.

△ Altair
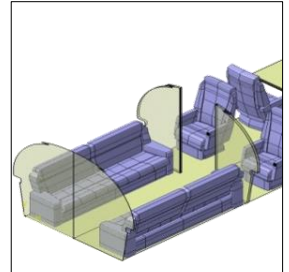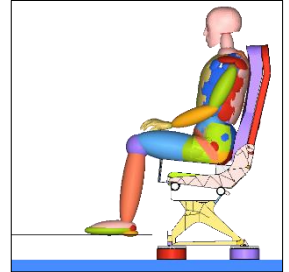
Child Restraint Seat Design

Challenge
The i-size regulation (ECE-R129) introduces more stringent requirements on the loading on children in frontal, side and rear impact loading conditions.

Solution
Use MADYMO's complete child dummy Q-series portfolio in combination with coupling Hyperworks Radioss FE solver to combine structural integrity analysis and minimum weight design with child occupant safety to design innovative child seat restraint systems.

Results
Save time and cost in developing new child seats while reducing risks on seat certification.
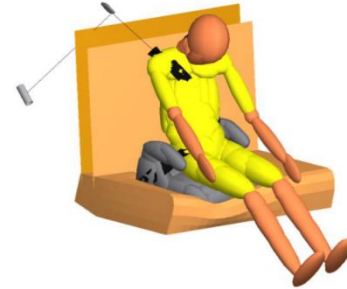
Occupant Protection

Challenge
Protect occupants in an increasing number of load cases coming from regulations and consumer protocols while simultaneously developing innovative structural concepts with advanced materials.

Solution
Use MADYMO Workspace's Coupling Assistant to set up Radioss-MADYMO coupling calculations and use MADYMO Coupling and dummy models to design efficient and robust restraint systems by covering a large design space including complicated load cases like IIHS small overlap.

Results
Save time and cost in developing innovative restraint systems for occupant safety by combining structural design with world-class dummy models.

Altair