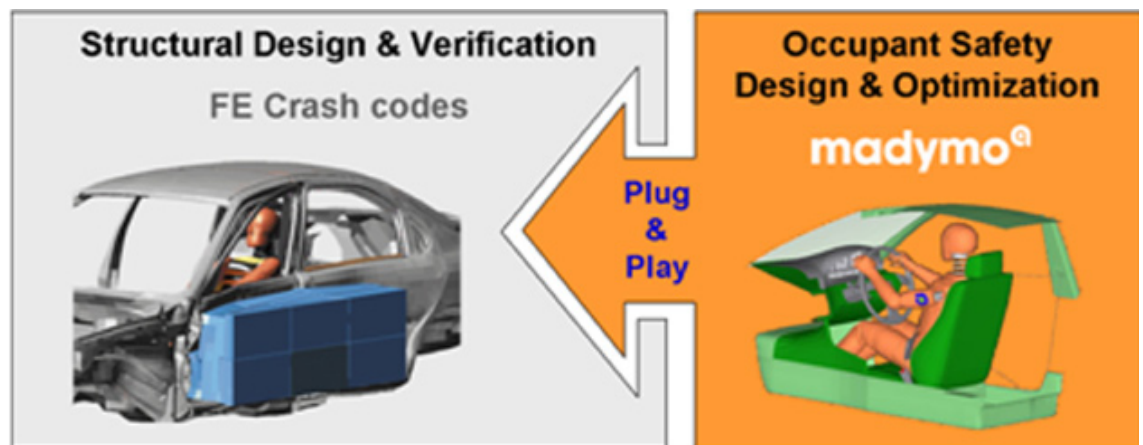


FE HARMONIZATION

The design of occupant restraint systems requires that many different variables are analyzed, resulting in hundreds to thousands of simulation runs.



Cost savings

Same MADYMO dummy model can be used in all codes. No need to purchase dummy models for each code.

Time savings

Same dummy model used in restraint design and vehicle structural design reduces modelling overhead by 25%.

Ease-of-Use

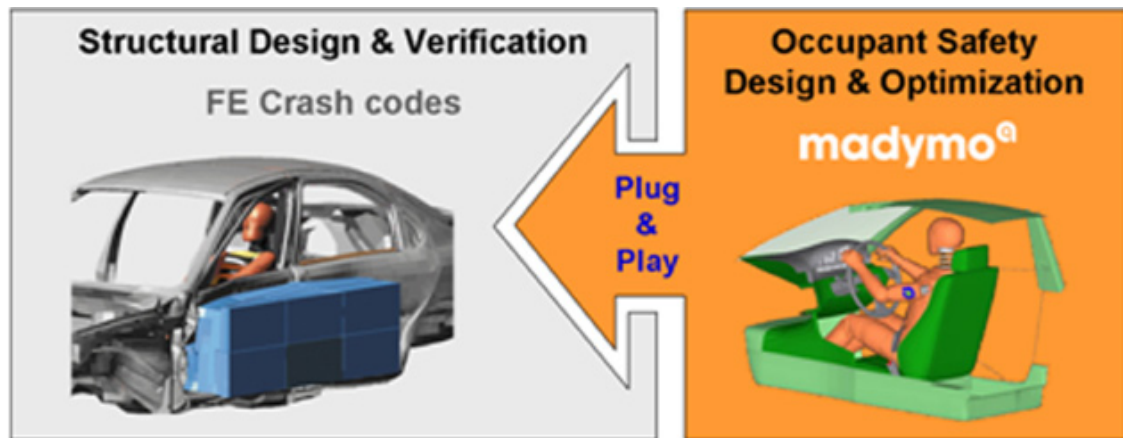
Dedicated graphical user interface eliminates the need for a FE user to learn MADYMO and reduces the time required to embed MADYMO models in a FE environment.

Customer testimonies

One European vehicle OEM which has adopted the coupling approach has seen a 25 percent drop in the time taken to conduct whole vehicle safety system validations as a direct result of the reduced modelling overhead by using a Madymo dummy model in both the restraint design and the verification of the full vehicle.

One carmaker was so impressed with the efficiency and accuracy of the coupling approach that it has changed its supplier requirements, eliminating the need for model data to be delivered in its native FE platform.

FE HARMONIZATION



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Best of both worlds

Finite element codes are commonly used to predict the vehicle deformations during a crash. These codes can predict complex deformations accurately, but are extremely computationally expensive. The design of occupant restraint systems requires that many different variables are analyzed, resulting in hundreds to thousands of simulation runs. To do this in a timely manner requires fast simulations, so MADYMO is typically used for this.

The coupling of MADYMO with FE codes enables safety designers to embed MADYMO models of the dummy and restraint system in their preferred FE crash code. At each time step of the simulation run the coupling interface is used to exchange information between MADYMO and the FE crash code on the forces resulting from the interaction between components modelled in the different codes (e.g. the MADYMO dummy model and the door trim modelled in FE). The combined result of the calculations performed in MADYMO and the FE crash code can be visualized and post-processed in a single graphical tool. Today, coupling is available between MADYMO and LS-DYNA, PAM-CRASH, RADIOSS and ABAQUS.

Cost & Time savings

By coupling MADYMO to their preferred FE code, car makers have been able to validate their structural and safety system designs together, without the need for any additional modelling.

Since this coupling approach allows the use of a Madymo dummy model in both the restraint design and the verification of the full vehicle, this approach also leads to a consistent assessment of the safety performance throughout the entire development process.

The new MADYMO token licensing system makes coupling particularly cost effective. With only 20 MADYMO tokens, a customer gets access to all of our thoroughly validated dummies and these models can be used in both MADYMO and all FE crash codes. This system is of particular use for suppliers who may deal with different customers, each with their own preferred FE modelling environment.

Ease-of-Use

Coupling Assistant is a dedicated graphical tool to enable FE code experts to include a MADYMO model (such as a dummy model) in their FE model without having to learn the details of MADYMO. It also reduces the time required to embed Madymo models in a FE environment.

Customer support

To verify if coupling is supported for your preferred FE code on the computer platform that you use, please check our website at www.tass-safe.com/ 'Download'. On this website you will also find instructions on how to install coupling and guidelines on how to use it.

TASS provides software, engineering and test solutions to complex safety development issues. Building on over 30 years of crash test and vehicle safety experience, TASS offers a wide range of services and world-class products to meet your requirements. The TASS mission is "Be a leading company in advanced software solutions to enhance human safety by proving innovative software tools and customer-focused solutions". TASS delivers its solutions thanks to a worldwide network of offices and laboratories allowing it to provide global solutions at a specialist local level. For more information, please contact your local agent or www.tass-safe.com

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