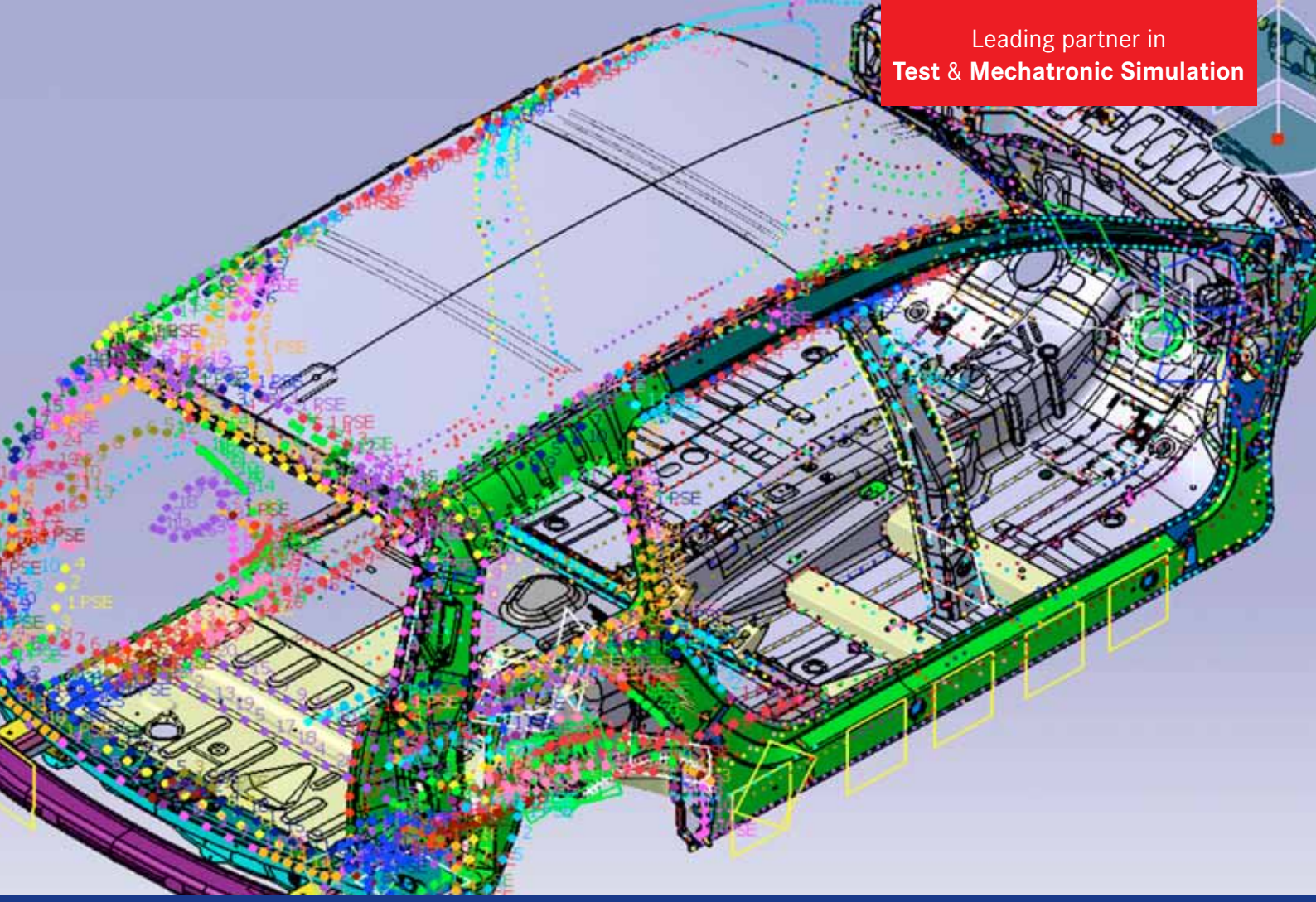

Leading partner in
Test & **Mechatronic Simulation**

LMS Virtual.Lab Structures

Unified modeling & multi-solver pre- post-processing

LMS Virtual.Lab Structures offers a scalable solution for structural modeling and analysis, integrating advanced model creation and manipulation tools to generate component, subsystem and full-system models in a far more efficient way. Its versatility is developed with one purpose in mind: save time and costs.

LMS Virtual.Lab Structures offers an integrated solution for component-, subsystem- and full vehicle-level analysis by integrating all model creation elements into one single platform, which delivers unparalleled efficiency in simulation model creation.

The solution fits easily into the user's existing architecture. It interfaces with industry standard solvers like NASTRAN, ABAQUS, LS-DYNA, RADIOSS and MADYMO for linear, non-linear, crash and safety analysis.

Not only does LMS Virtual.Lab Structures support traditional mesh-based scenarios, it primarily enables integrated CAD based scenarios, therefore effectively eliminating costly translation steps. Generic assembly and unified modeling, full process associativity, end-to-end integration, support of CAD and/or mesh-based scenarios and capabilities to automate processes are key elements delivering value added engineering time.

- → Scalable solution for component, subsystem and full vehicle analysis for multiple solvers
- → Faster engineering iterations with template-based and potentially automated associative analysis
- → Unified modeling and generic solver and attribute independent assembly, yet automatic generation of solver specific models
- → Integration with CAD ensuring that available information is reused, increased CAD/CAE communication, up to 50% faster assembly and up to 75% faster iteration of design changes

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LMS Virtual.Lab Structures - Rev 11

Always innovative

Faster and easier assembly solution

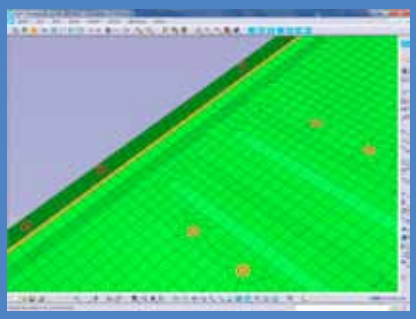
The generic assembly solution ensures greater insight into the quality of the assembly and enables faster correction of connection issues, for instance by interactively repositioning the geometry points used to define a spot weld. Furthermore, tools are available to efficiently cut models and clean up non-used features, to derive from a full vehicle crash assembly model a variant for front, side or rear impact, for example.

High performance and usability for crash

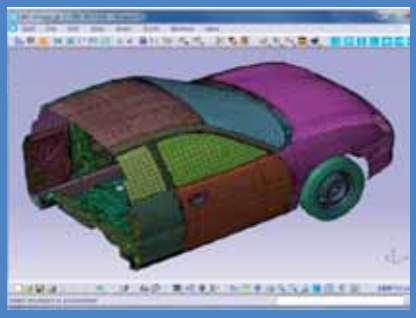
The focus on performance and usability for crash, especially in areas like section definition, time step treatment, intersection and penetration checking and model checking in general are key to fast and accurate model creation.

Unified modeling for durability

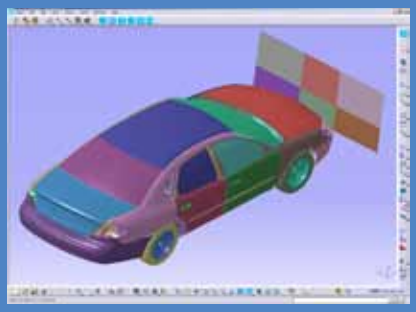
The quality of the durability models created for the unified assembly model is empowered by a new remeshing algorithm. Fine durability spot weld pattern meshes are improved where required, employing the intelligent orientation of the regions, and selecting the transition area and mesh correction functions via ANSA™ services.



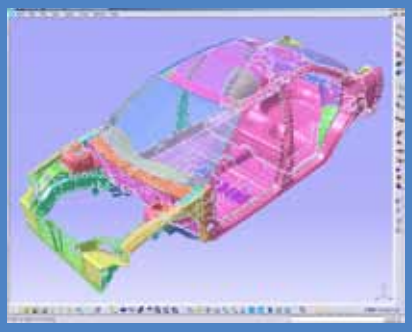
Spot welds durability pre-processing



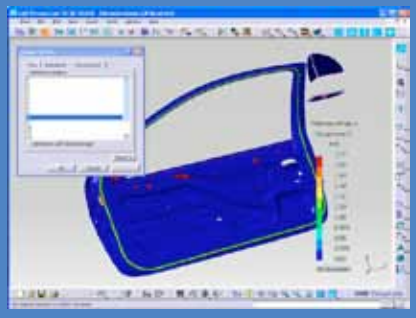
Model cutting function



LMS Virtual.Lab Crash pre-processing



Automatic detection of spot welds



Full support of SOL200 Optimization

Other highlights

- Nastran vibro-acoustic extensions, including grid contributions next to panel and modal contributions.
- Various extensions to Nastran SOL200 pre- post-processing functionality.
- Upgrade of ABAQUS interface, including non-flat structures and import of spot weld definition from *.odb and detection of ABAQUS spot welds from imported models.
- Upgrade of ANSA™ support and remeshing services for meshes including fine spot welds.
- Extensions for RADIOSS pre-processing: new or enhanced properties for composite, pre-tensions springs, kinematic joints or screws.
- Feature browser, automation and mass overview extensions.

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