

Virtual Modeling and Simulation Environment

Importance of Our Work

Multi-step finite element modeling and simulation processes require multiple engineers, multiple software packages and the ability to carry the material history through to the final step.

Though commercial software packages exist to support the individual modeling steps in these multi-step efforts, there is a lack of support for data transformations between commercial data formats and for mesh re-mapping.

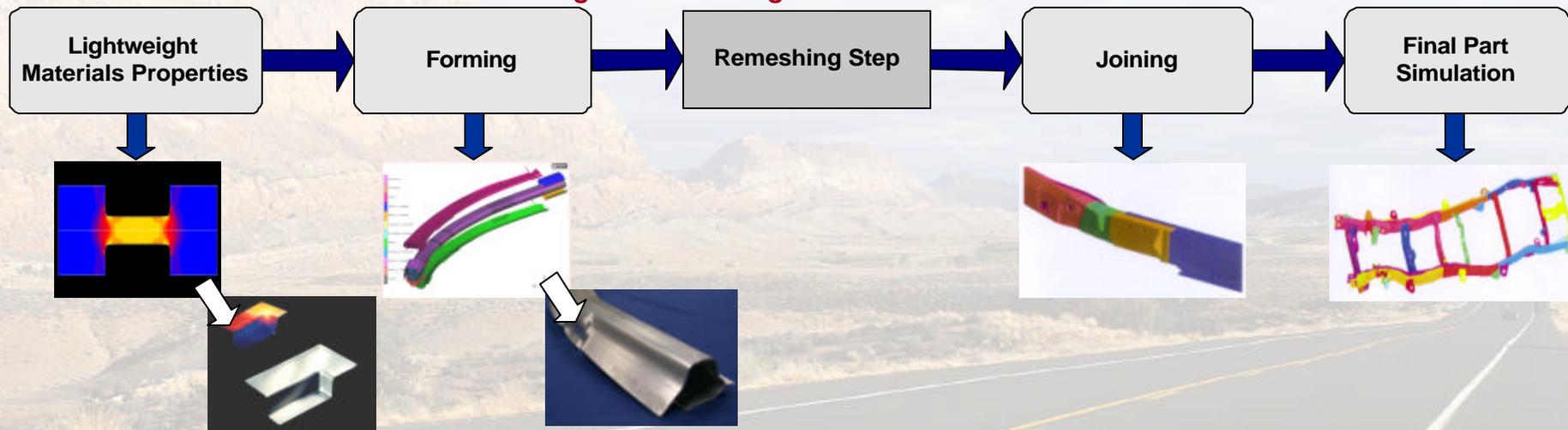
Project Benefits

- Enables teams of geographically distributed engineers to specify, execute, review, and annotate multi-step finite element modeling and simulation efforts
- Fills gaps between capabilities provided by commercially available tools
- Allows all data for a multi-step process to be stored in one location, accessible to the entire design team

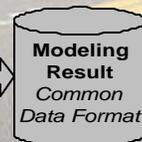
Capabilities

- *Model Transformation* transforms the model and results data among various finite element software packages and a common data format
- *Information Capture* allows for the recording and viewing of information from the engineer at each step
- *3D Model Visualization* provides a visual representation of results stored in the common data format

Integrated Modeling and Simulation Process

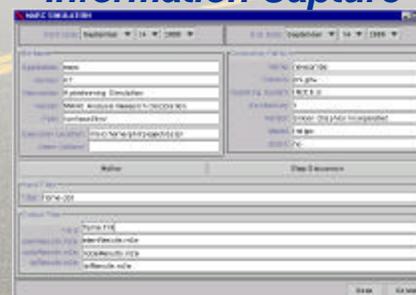


Model Transformation



Transformations include the results data associated with the model, such as stress/strain tensors and element thickness. This allows the material history to be carried through the entire process.

Information Capture



Encourages the engineer to record details about each step and ensures that information will be accessible to all project members.

3D Model Visualization



Enables users, without access to the codes that produced the results, to review and collaborate with one another.