



PAM-TFA FOR CATIA V5

A DEDICATED SOLUTION FOR COMPONENT
FEASIBILITY AND COST ESTIMATING

KEY BENEFITS

- Fast component feasibility check, which is quick and simple to use.
- Flat blank shape prediction in a few minutes for upfront costing and material utilisation assessment.
- Full integration into CATIA enables Direct Formability check, without the need for any data transfer, or file management.
- CATIA associativity updates the simulation each time the model geometry changes.
- Minimal training for the new buttons / functions within the familiar CATIA environment.
- Part trim curve development on die face.
- Fast die feasibility check including minimal cutting pattern blank shape estimation.



DESIGNER ADVISOR FOR SHEET METAL STAMPING SIMULATION APPLICATION IN CAA V5

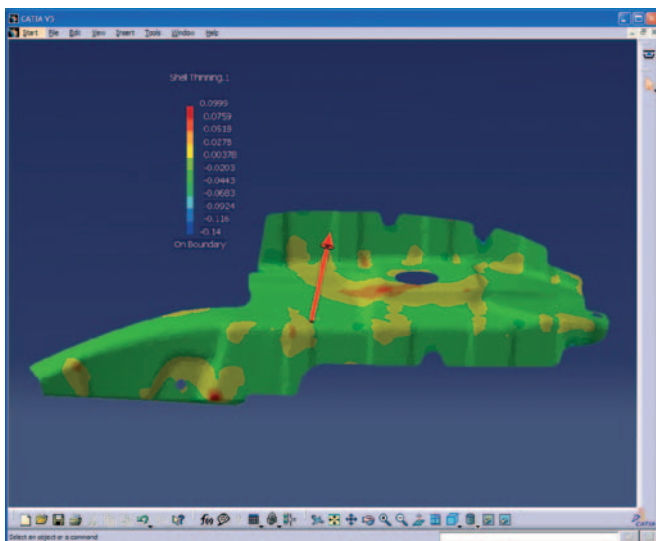
TFA (Transparent Formability Analysis) promotes collaborative engineering by providing engineers with PAM-TFA tools to quickly and easily identify manufacturability issues on newly drafted CAD part early in the design process, as well as an estimation of the material utilisation. Engineers benefit from the seamless integration of simulation performed on native geometry within CATIA V5.

PRODUCTIVE AND STREAMLINED ENVIRONMENT

PAM-TFA for CATIA V5 simplifies the component designer's workload by implementing upfront manufacturing assessment directly into the CATIA PLM context.

The integration in CATIA V5 PLM environment provides a number of benefits. Instant productivity with minimal learning curve within a familiar user environment. PAM-TFA for CATIA V5 has been designed to connect easily with PAM-DIEMAKER for CATIA V5, to allow the user to seamlessly continue the die development once initial component feasibility is satisfied. Die feasibility assessments and blank shape influence can then be made with the Cutting pattern' option of TFA.

INDUSTRIALLY-ORIENTED TECHNOLOGY

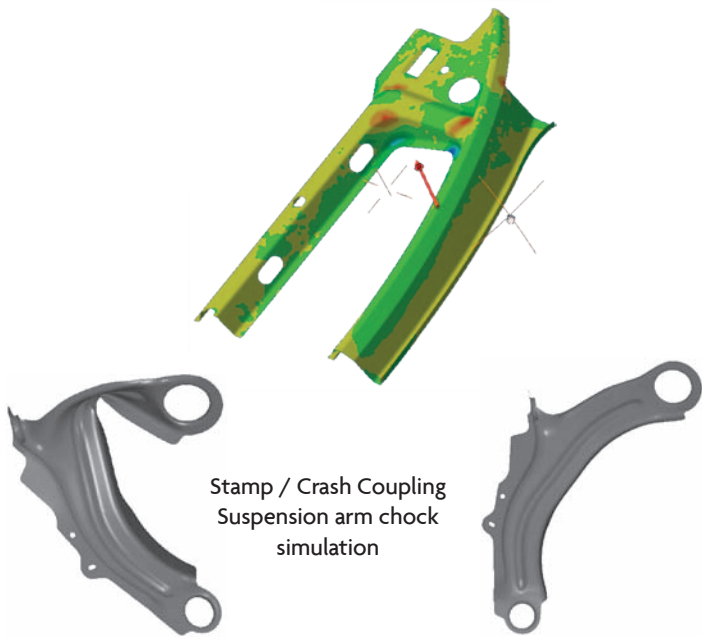


PAM-TFA for CATIA V5 provides a new workbench integrated into CATIA V5, offering state-of-the-art inverse simulation capabilities for metal forming applications directly within the CAA V5 environment.

PAM-TFA is built around a proven one-step solver, allowing for robust and realistic simulations, covering:

- Formability for part feasibility and optimization
- Flattening for material cost estimation and optimization
- Different forming conditions:
 - Forming with normal friction
 - High friction with sticking zones
 - Locked boundaries
 - Symmetry.
- Projection on non-planar surfaces

Automotive component
displayed in PAM-TFA for
CATIA V5



Stamp / Crash Coupling
Suspension arm chock
simulation

Neglecting the manufacturing effect (PAMCRASH simulation without chaining)

Taking into account the manufacturing effect (PAM-CRASH simulation with chaining)

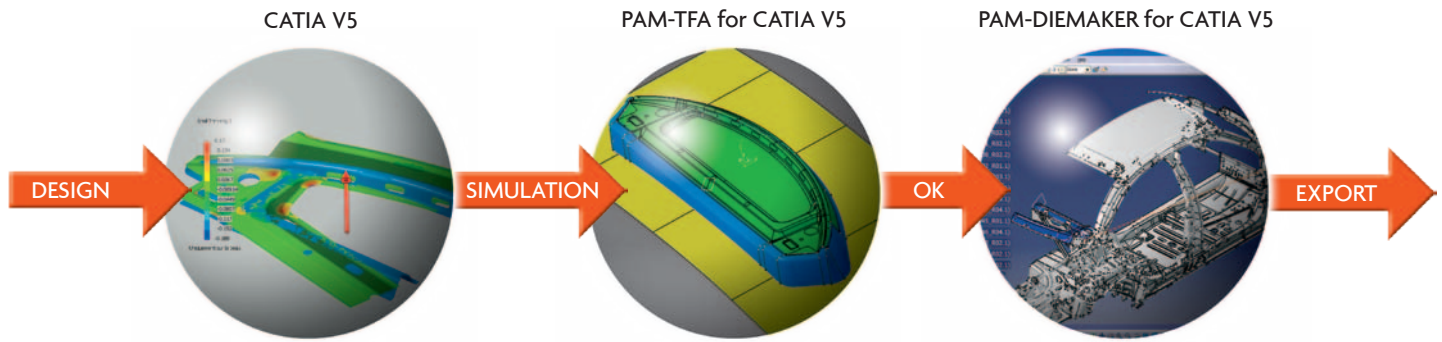
Courtesy of Auto Chassis International

PAM-TFA for CATIA V5 being built from a component designer's point of view, only limited FE knowledge is needed. The user-friendly toolbar guides the user through the definition process. It can also be used at anytime to define an input and start a physics-based verification in a matter of minutes.

Typically, an engineer tests for feasibility at the component level. However, components are usually part of a more complex assembled product. The 'in service' performance of the assemble is strongly influenced by the forming history, thinning and strain hardening both having a significant influence. Once component feasibility is confirmed with TFA, the product performance can be assessed in a better way using ESI Group's Stamp to Crash mapping capabilities.

ASSOCIATIVITY

PAM-TFA for CATIA V5 fully supports the continuous improvement process by associating CAD design and forming simulation. This provides key benefits to CATIA V5 users. For any change in the part design, PAM-TFA for CATIA V5 automatically updates the simulation model accordingly. Therefore, the user doesn't lose track of modifications and can quickly evaluate the physical influence of a geometrical change.



ABOUT ESI GROUP

ESI is a world-leading supplier and pioneer of digital simulation software for prototyping and manufacturing processes that take into account the physics of materials. ESI has developed an extensive suite of coherent, industry-oriented applications to realistically simulate a product's behavior during testing, to fine-tune manufacturing processes in accordance with desired product performance, and to evaluate the environment's impact on product performance. ESI's products represent a unique collaborative and open environment for Simulation-Based Design, enabling virtual prototypes to be improved in a continuous and collaborative manner while eliminating the need for physical prototypes during product development. The company employs over 750 high-level specialists worldwide covering more than 30 countries. ESI Group is listed in compartment C of NYSE Euronext Paris. For further information, visit www.esi-group.com.



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