get it right®

CATIA INTEGRATED SOLUTIONS FOR COMPOSITES DESIGN AND MANUFACTURING:

PAM-RTM FOR CATIA V5
PAM-QUIKFORM FOR CATIA V5

KEY BENEFITS

- Simulation drastically increases productivity by being directly based on the laminate definition built in CATIA V5 Composites Design.
- The direct export to digital manufacturing machines of design options such as flattening and 2D/3D transfer induces important time saving.
- The fully integrated application dramatically reduces the design cycle time allowing direct link between mold design and simulation results.
- Users benefit from the powerful CATIA V5 collaborative engineering environment.

DASSAULT SYSTEMES Gold Software Partner

CAA V5 BASED

Referenced on PLM Market Connecting Partners

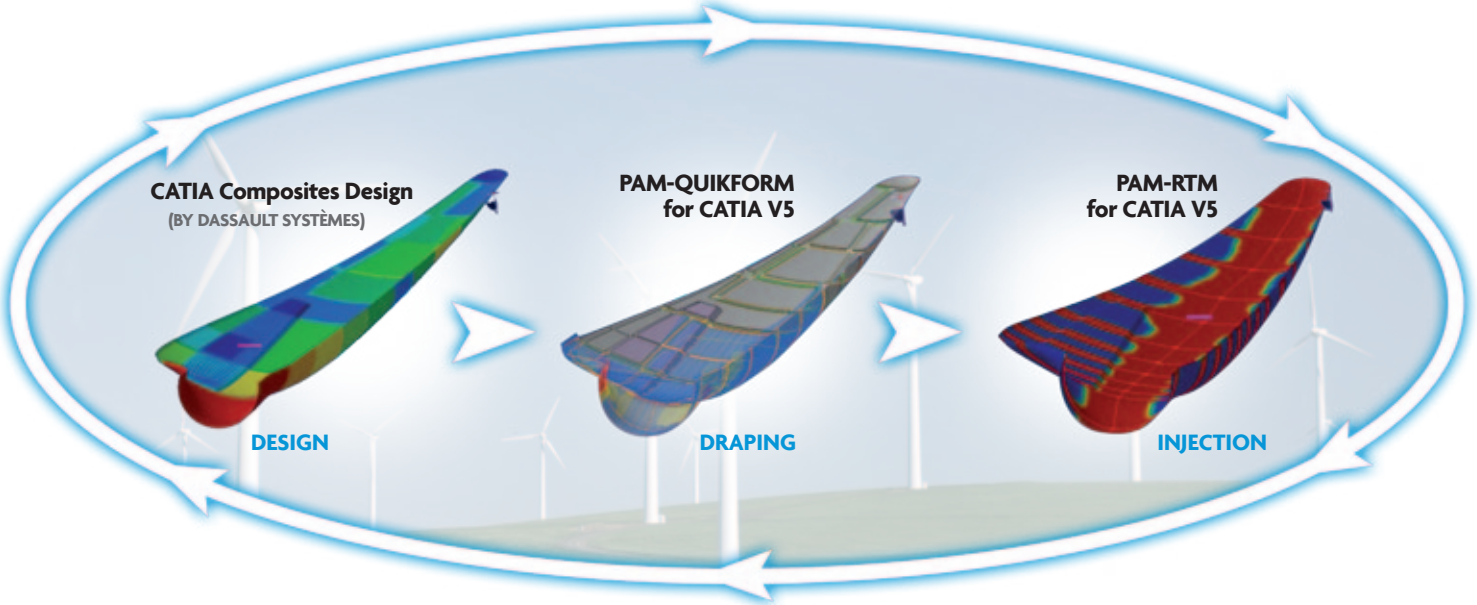
ESI's CATIA V5 PLM-based composites portfolio provides composite part designers with a powerful set of simulation solutions addressing design and manufacturing issues directly within a generative modeling PLM environment.

COMPOSITES DESIGN OPTIMIZATION WITH PAM-QUIKFORM FOR CATIA V5

- A unique and breakthrough solution in the market that predicts the deformation of Composite parts reinforcement during the manufacturing process.
- Enables decision-making early in the design process, by eliminating bad design choices that would later lead to manufacturing problems.
- Features a unique capability on the market that enables the simulation of unidirectional composite deformation during the draping process.

PROCESS AND MOLD TUNING WITH PAM-RTM FOR CATIA V5

- An easy-to-use 2D/3D simulation software which covers a wide range of manufacturing processes based on liquid composite molding: RTM (Resin Transfer Molding), VARTM (Vacuum Assisted RTM) and Infusion.
- Optimizes process parameters that directly impact the pressure distribution during the mold filling such as injection pressure, flow rate, molding temperature, closure forces, and position of injection gates and vents.



FROM REINFORCEMENT DRAPING TO PROCESS AND MOLD OPTIMIZATION WITHIN A SINGLE ENVIRONMENT

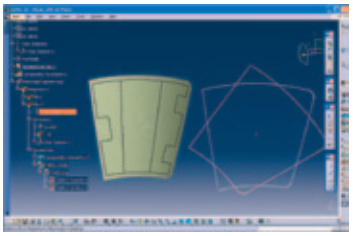
PAM-QUIKFORM for CATIA V5 and PAM-RTM for CATIA V5 demonstrate how ESI's physics-based simulation solutions can be used in CATIA V5 PLM environment in order to offer CATIA V5 users a complete solution covering the design and virtual manufacturing of composite parts.

PRODUCTIVE AND STREAMLINED

PAM-QUIKFORM for CATIA V5 minimizes the composites designer's workload by implementing design and process knowledge directly into CATIA V5.

- Simulations are directly performed based on the laminate definition built in CATIA V5 Composites Design, Dassault Systèmes' composites design module.
- All the existing CATIA V5 Composites Design options are available, like flattening and 2D/3D transfer. These are exportable to digital manufacturing machines, such as Automatic Laser Pointer, or nesting and cutting programs available in CATIA V5.

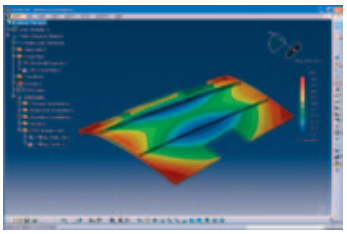
PAM-QUIKFORM for CATIA V5 is based on geometrical methods and can tell, in a matter of seconds, if a selected material can be used to form a part without potential problems, like wrinkling. In addition, its algorithms capture the specific deformation mechanisms occurring in unidirectional draping, such as intra-ply sliding, or the spreading of fibers.



Aeronautic panel draping with PAM-QUIKFORM for CATIA V5.

PAM-RTM for CATIA V5 takes full benefit of the seamless integration of simulation algorithms within CATIA V5 and the native geometry.

- The direct link between mold design and simulation results fosters productivity and shortens the design cycle. It allows the user to perform injection analysis directly on the CAD model, which ensures a consistent geometric dataflow in an iterative continuous improvement process.
- The full integration of PAM-RTM within CATIA V5 eradicates the loss of information due to geometry conversion and transfer. Thus, communication between design and simulation results is very dynamic.



Aeronautic panel injection with PAM-RTM for CATIA V5.

Customer References:

BAMTRI, BIAM, Boeing Research & Technology Australia (BR&TA), CCAT, Chengdu Aircraft Corp., CRC-ACS, Dassault Aviation, EADS/IW, Eurocopter, GE, Hexcel, ONERA, Pôle de Plasturgie de l'Est (PPE), Teijin.

Supported platforms:

PAM-RTM for CATIA V5: Prerequisites: Package CD2 or HD2+CPE or HD2+CPM. Meshers FMS and/or FMD are strongly recommended.

PAM-QUIKFORM for CATIA V5: Prerequisites: Package CD3 or HD2+CPE or HD2+CPM.

PAM-QUIKFORM for CATIA V5 and PAM-RTM for CATIA V5 are both available on Windows.

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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