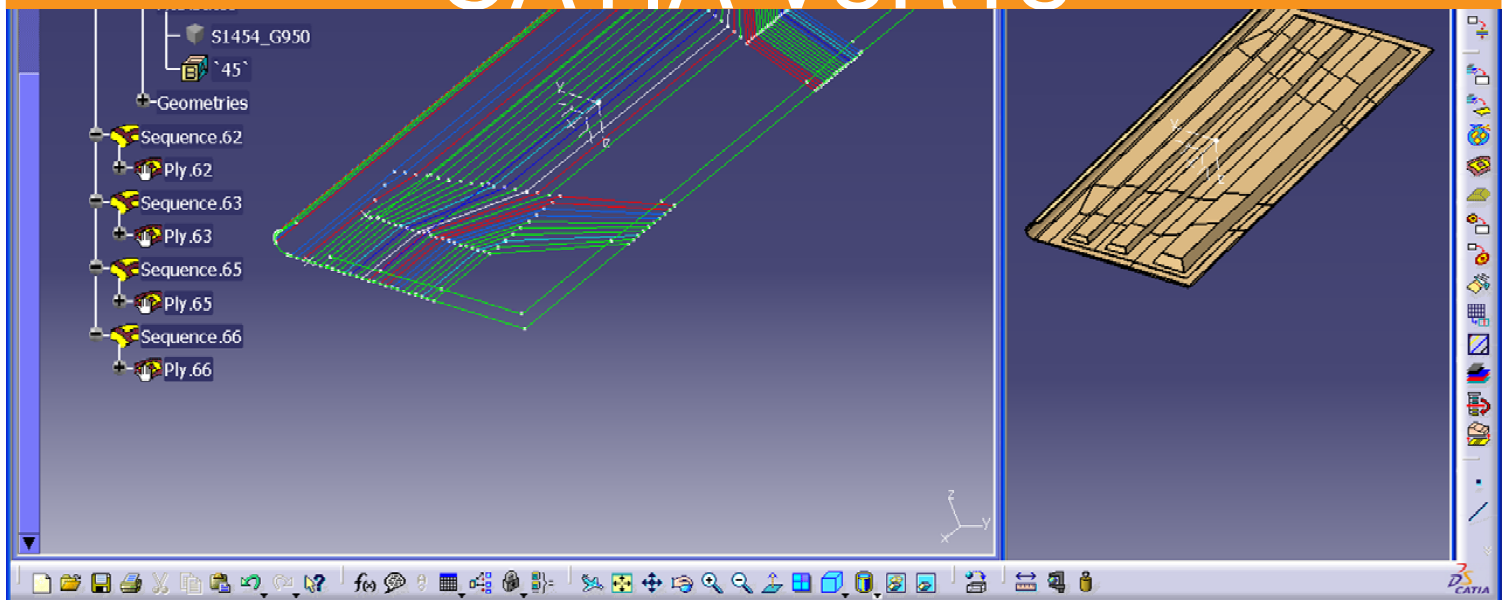
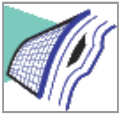


Mechanical Design

CATIA - Composites Engineering (CPE)

CATIA V5R18





Mechanical Design

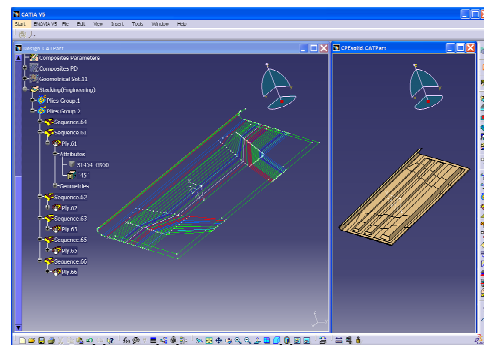
CATIA - Composites Engineering

Provides powerful process oriented tools dedicated to the design of composites parts from preliminary detailed design to engineering detailed design.

Product overview

CATIA Composites Engineering Design (CPE) provides process oriented tools dedicated to the design of composites parts from preliminary to engineering detailed design. CPE targets aerospace, automotive, consumer goods and shipbuilding industries OEMs and suppliers.

Automatic ply generation, exact solid generation, analysis tools such as fiber behavior simulation and inspection capabilities are just some of the essential components of this product. By enabling users to embed manufacturing constraints earlier in the conceptual design stage, this product shortens the design-to-manufacturing period. Its native integration with the pervasive knowledge and ease-of-use of V5 reveals CPE as a unique composites design solution in the marketplace.



- ❑ Easy access to material properties and attributes
- ❑ Powerful ply modeling tools (dedicated ply modification of 3D features),
- ❑ Exact solid generation from plies for digital mock-up review
- ❑ Complete Composites Inspection tools (for instance core sample and numerical analysis, ply table..)
- ❑ Producibility analysis tools for embedding manufacturing constraints early in the design phase

Product Highlights

PRELIMINARY DESIGN

- ❑ Easy-to-use zone (geometry and laminate) and transition zones modeling definition
- ❑ Solid and top surface generation from zones for early 3D representation
- ❑ Automatic ply generation including ply staggering with stacking rules

ENGINEERING DETAILED DESIGN

Product Key Customers Benefits

Specification driven composites design

approach... CATIA - Composites engineering 2 (CPE) , is a process-centric solution for designing composites parts. It delivers all the tools needed to ensure compliance with composites part design best practices. Based on CATIA's experience in the high-tech composites domain, as well as on the latest CAD V5 technologies, Composites engineering 2

(CPE) uniquely delivers an intuitive, specification-driven solution that helps the user concentrate on optimizing the design.

Support of specific geometrical

configurations... Owing to their geometrical configuration, some composites parts require complex designs. CATIA - Composites engineering 2 (CPE) can manage multi-part geometries, such as T-shaped parts, core stiffened parts, and stiffeners more easily than standard composites design solutions.

Powerful plies generation from zones...

CATIA - Composites engineering 2 (CPE) allows designer to focus on the design intent, by delivering highly productive ply generation from zones functions, with automatic management of the ply staggering and stacking rules. Hence, the design is natively compliant with company's standards and know how for composite parts design.

Manufacturing parameter management at the early stage of the design process...

Productibility checking enables users to predict how composites materials will behave on complex surfaces. Users can visualize fiber orientations, predict manufacturing problems, such as wrinkles or bridges, and take corrective action in the initial stages of design, eliminating costly change orders and ensuring a producible part.

Uniquely takes advantage of the CATIA V5 infrastructure and other applications...

- Composites engineering 2 (CPE) is a unique CATIA V5 technology-based product that takes advantage of the unequalled CATIA V5 offering to complete the composite design process (FEA, DMU, Machining...). One example is the specific V5 relational design change management capabilities that use automatic updates to reduce the impact of changes to the design-to-manufacturing process. Another example is the ability to create and reuse rules instantiated in stacking sequences to take into account industrial standards and

corporate know-how. Using CATIA V5's knowledgware capabilities in preliminary design enables the automatic update of a part in the engineering design phase for design change management purposes. This ability avoids the need to restart the full design phase, saving time and expense.

ABOUT CATIA V5R18

CATIA is Dassault Systemes' PLM solution for digital product definition and simulation.

plm.3ds.com/CATIA

