



# CATIA PLM Express

## CATIA - Composites Manufacturing Preparation

**Provides powerful process oriented tools dedicated to manufacturing detailed design of composites parts**

Companies are facing the challenges of developing complex production-ready composite design and mass-producing composite parts. In order to overcome these challenges, manufacturing and engineering need to efficiently collaborate throughout the product development process.

### Overview

The CATIA - Composites Manufacturing Preparation option provides a completely CATIA integrated environment dedicated to manufacturing detailed design of composite parts, enabling engineers to include all manufacturing constraints early in the composites design process. With powerful synchronization capabilities, this option is the essential link between engineering design and physical manufacturing.

### Customer Benefits

- Fully integrated in the V5 environment
- Management of the manufacturing parameters at the early stages of the design process
- Easy collaboration between design and manufacturing office enabling concurrent engineering
- Strong manufacturing partnerships ensure that composites solution can be used by any company, regardless of the manufacturing process and machine providers

## Key Capabilities

### Dedicated manufacturing part modeling capabilities

such as manufacturing shell swapping, material excess definition and 3D multi-splice

### Best-in-class fiber simulation and flattening tools for early assessment of manufacturability

- Producibility 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.

### Effective manufacturing export capabilities and automatic shop floor documentation

- Airbus Cimpa, Magectic Systems Inc, ESI Group, MTorres, Cincinnati Lamb, and Ingersoll deliver a complete offering based on V5 that addresses all composites manufacturing techniques, such as laser projection to improve reproducibility and shorten the lay-up time, nesting and cutting of fabrics, resin transfer molding simulation, tape laying design and programming and fiber placement automation.

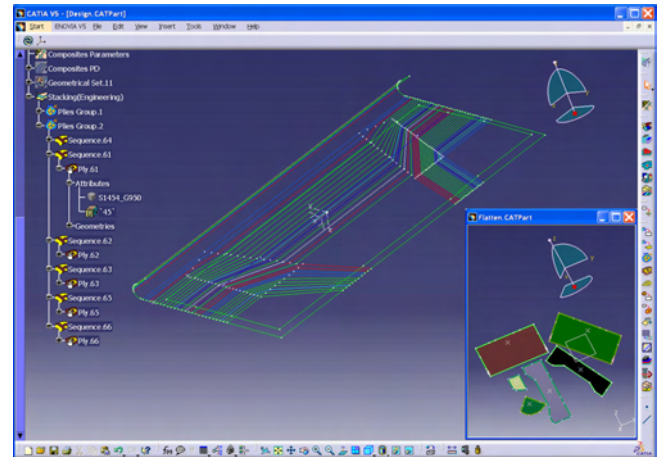
### Powerful synchronization/collaboration mechanisms with engineering detailed design

- Ensures true associativity/consistency between engineering design and physical manufacturing and allows suppliers to closely collaborate with OEMs to the composite design process.

### Fully integrated in the V5 environment

takes advantage of the unequalled CATIA V5 offering to complete the composite design process (FEA, DMU, Machining, etc.), for instance:

- The specific V5 relational design change management capabilities use automatic updates to reduce the impact of changes to the design-to-manufacturing process. This ability avoids the need to restart the full design phase saving time and expenses
- The ability to create and reuse rules instantiated in stacking sequences enables to take industrial standards and corporate



Screen capture of CATIA - Composites Manufacturing Preparation

know-how into account.

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