

VISTAGY Launches Latest Remedies for Composite Design

By John Myers, ConnectPress Editor

During a recent visit to VISTAGY's corporate office in Waltham, MA I had the chance to see the company's two latest product launches SyncroFIT 2010 and FiberSIM 2010 in action.

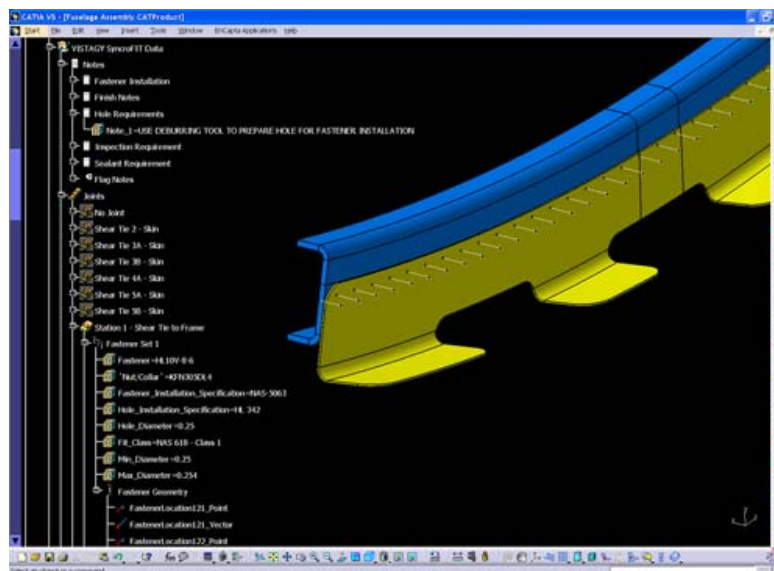
Steve Peck, director of product and market strategy for aerospace, and Jeff Grossman, manager of corporate communications for VISTAGY, explained that both tools are designed to help manufacturers bring their designs to the marketplace as quickly and efficiently as possible.

SyncroFIT 2010 is the latest iteration of the organization's software toolset for the definition and management of fasteners, joints and interfaces.

The goal behind the toolset is to help individuals working in the aerospace field capture digital representations of their airframe assemblies and share that information across their entire enterprise.

Because defining holes and fasteners can be both one of the most-time consuming and tedious tasks in airframe design and one of the most important to the safe functioning of the aircraft SyncroFIT 2010 focuses on helping designers create a system for the tracking and managing the thousands of fasteners that can be involved in any project.

This includes a number of capabilities built around predicting the function and operation of fasteners and joints in the overall airframe assembly including the ability to author, validate and communicate both design definitions and manufacturing assembly states.



Shown is the published output from SyncroFIT® 2010 which represents critical airframe data in a standardized format within the CAD model to support model-based definition initiatives.

These functionalities have made the software popular with a number of aerospace manufacturers including GKN Aerospace, a tier one supplier of aviation parts.

GKN recently announced that they were adopting SyncroFIT as a way to resolve the company's critical need for a solution to define holes and fasteners in their composite designs.

The organization specifically called upon SyncroFIT's ability to help them work with the variable skin thicknesses found in many composite designs. In addition GKN Aerospace cited SyncroFIT as a solution addressing the challenges of creating an integrated approach to airframe assembly and design.

Peck explained that SyncroFIT 2010 features a number of new functionalities including earlier and broader management of airframe assemblies, a focus on deeper integration with the 3D CAD process, additions to the process for design validation and a streamlined user interface.

The inclusion of earlier and broader management of airframe assemblies is a new design element created to help users quickly transfer analysis requirements for joint fastening to a 3D CAD environment based on the user's input requirements and design rules. The goal of this feature is to help users optimize designs for faster and more accurate bill of material reporting.

In addition users will see expanded managing interfaces, fastening requirements and a larger array of hardware structures.

Integrating SyncroFIT 2010 with CAD tools means users will see a unified interface for the communication of CAD data across the enterprise by creating a series of strict guidelines for editing and navigating data.

An expansion of design validation features will allow users to speed up the review process with some projections accelerating the process of design checking by up to 95 percent, according to Grossman.

Rounding out the demonstration Peck emphasized that VISTAGY had spent a great deal of time and effort improving the user experience embedded in the software including the ability to customize the experience based on specific use cases.

As for FiberSIM 2010, VISTAGY aimed to meet market demand for a solution to effectively design and develop composite structures. FiberSIM 2010 includes features for the conception, laminate definition and ply creation aspects of the simulation documentation and manufacturing phases.

Like SyncroFIT, FiberSIM has been adopted by many widely recognized organizations in the aerospace industry and has been leveraged in the creation of automotive and wind turbine design.

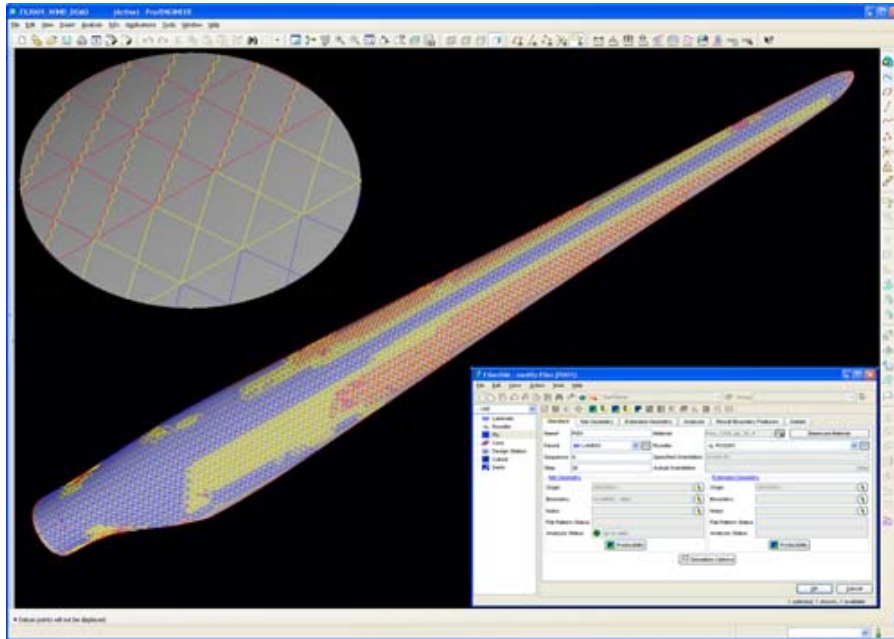
In one example provided by Grossman BAE Systems, makers of aerospace and defense systems adopted the software toolset as a solution for migrating the company's legacy data resources between CATIA V4 and CATIA V5.

FiberSIM 2010 includes six new areas of functionality including, new features for preserving composite design intent, expanded capabilities for the manufacture of advanced materials and processes, an increased focus on the connection between design and analysis, the integration of 3D model-based representations and new functionalities for validating as-built parts.

Peck showed how the addition of new features for the preservation of design intent would allow users to capture inputs at the beginning of the design phase and assist in the automation of detailed part definition and ensure

adherence to design rules.

In addition the feature-set also includes a rules driven, structure-based architecture to help users create guidelines to ensure both design intent and corporate standards are enforced. This is added to FiberSIM 2010's core functionality along with a volume fill composite ply development capability to maintain the intent of thick laminates by automating ply shapes.



The new Multi-Layer Material Simulation in FiberSIM® 2010 provides insight into the drapeability of non-crimp fabrics (NCF) and other advanced materials, which reduces the need for physical prototypes.

The new feature for the manufacture of advanced materials is a tool designed to help users take advantage of multi-layer material simulation to develop a better understanding of the drapeability of non-crimp fabrics and many other materials. In addition the tools were created to help users understand the necessary manufacturing processes for these materials.

The expansion of the connections between the analysis and design phases is designed to help users create more iterations by streamlining the communication between both aspects, said Peck. These features are supplemented by integration with several existing analysis packages such as ANSYS Composite PrepPost, MSC Patran, NX Laminate Composites and BETA CAE Systems ANSA.

In addition by integrating 3D-model based representations FiberSIM 2010 will help users take advantage of their composite parts within the structure of their native CAD environments while conveying the basic elements of the composite part in a standard format.

Finally, the newly added tools for validating as-built parts will help users import machine paths from fiber placement NC software and interface with automated ply driven inspection equipment.

Both software toolsets, SyncroFIT and FiberSIM, are designed to help users streamline and optimize the process of working with some of the most complex aspects of design and the latest versions of those products have only expanded on that capability. The solutions have direct integration with CATIA, Pro/E and NX CAD software.

SyncroFIT 2010 has been available since October 5 and FiberSIM 2010 is available as of November 3.