

SAMCEF Express

SAMTECH brings its specialized expertise to make **SAMCEF Express** available within CATIA V5 environment. **SAMCEF Express** offers to CATIA V5 users numerous facilities for the modelling and the analysis of nonlinear thermo-mechanical problems without leaving the CATIA V5 environment.

With **SAMCEF Express**, SAMTECH enables CATIA V5 users to perform advanced non-linear mechanical analysis using SAMCEF Mecano and thermal analysis using SAMCEF Thermal. This new product allows designers, mechanical engineers, stress engineers and thermal engineers to predict the complete functional performances of their products, very early in the design process and directly from their familiar CATIA V5 environment.

Fully associative and completely integrated with the CATIA Generative Part Structural Analysis (GPS), **SAMCEF Express** enables CATIA V5 users to quickly produce non-linear models by adding specific features to an existing GPS model. With **SAMCEF Express**, the CATIA V5 users benefit from extended non-linear solving capabilities in a transparent environment, speeding up the design work and eliminating the expensive iterations during the design process thanks to the use of a single user interface for the geometry definition and the Finite Element pre-and post-processing.

Taking into account heat transfer due to conduction and convection, **SAMCEF Express** users can analyze the stationary thermal behaviour of 3D structures from CATIA V5 environment. They can easily obtain the temperature distribution. A variety of boundary conditions is available, from imposed temperature to imposed flux or convection coefficient and fluid temperature. Then a thermo-mechanical analysis can be performed by applying thermal results as boundary conditions. Integrating non-linear material behaviour, **SAMCEF Express** allows users to analyze the quasi-static behaviour of 3D, Axi-symmetric structures or Plane Stress with membrane elements from CATIA V5 environment. They can easily obtain the Von Mises stresses, plastic strains, large deformations, contact pressure and successive configurations. A variety of boundary conditions (clamp, surface slider, advanced restraint, iso-static restraint, enforced displacement, flexible-flexible contact with large relative displacements, ...) and mechanical loading (distributed force, moment, force density...) are available.

DASSAULT Systemes and SAMTECH jointly introduce in the PLM market place a unique non-linear thermo-mechanical solution embedded in CATIA V5 environment allowing their customers to perform product engineering optimization. Due to the easy transparent use of advanced non-linear capabilities, the customers avoid expensive re-design, increase their product quality and reduce costs of prototyping and time to market.