

CatSIM V5, Interface between CATIA V5 and SIMPACK

In mid 2004 INTEC became a Dassault Systèmes CAAV5 adopter and began the development of CatSIM V5, the interface between CATIA V5 and SIMPACK. CatSIM V5 enables engineers to use CATIA V5 models with SIMPACK, and designers to perform interference and motion path analyses in CATIA V5, based on results from a simulation with SIMPACK. By using CatSIM V5 the development process can be sped up and the time consuming manual data input can be automated.

INTEC is pleased to announce that in mid 2004 it became a Dassault Systèmes CATIA V5 Application Architecture (CAAV5) adopter.

The partnership, which includes the right to develop applications, based on Dassault Systèmes' successful CATIA V5 environment, was essential in the process of developing CatSIM V5, the interface between SIMPACK and CATIA V5.

CatSIM V5, which is seamlessly integrated into CATIA V5, enables designers and engineers to work together within the CATIA V5 framework by exchanging models and simulation results.

Engineers can access the CATIA V5 models in the CATIA V5 GUI and export them to SIMPACK. The process of defining a SIMPACK simulation model based on a CATIA V5 model is therefore greatly simplified and sped up. Also error-prone manual data input, e.g. mass data and marker positions, is no longer necessary since the data is automatically generated by CatSIM V5 based on the CATIA model.

In SIMPACK these models can be completed with joints, drives, forces, contact elements and even flexible bodies. The full capabilities of the SIMPACK solver are then available for performing analyses with these models.

The simulation results can be viewed both in the SIMPACK post-processor as well as in the CATIA V5 environment.

Designers can view and use the simulation results in their native CATIA V5 environment and thus gain better insight into the behaviour of their

design. Typical uses in the CATIA V5 environment for the motion results generated by SIMPACK are interference and collision analyses, as well as the generation of motion paths of parts and assemblies.

Since the interface is bi-directional, updates of the design model created and maintained in CATIA V5 can be easily incorporated into the SIMPACK model. This can be done without having to completely redefine the SIMPACK model.

The initial releases of CatSIM V5 can be used for generating SIMPACK bodies, generating SIMPACK models, exporting geometry for contact simulation and for importing motion data into CATIA V5, all based on CATIA models.

When exporting bodies, the user can either select a single CATIA part (CatPart), multiple CATIA parts or CATIA assemblies (CatProduct) and subassemblies to be written out as a single SIMPACK Body. The Body mass properties, co-ordinate systems and the geometry are exported to the SIMPACK database.

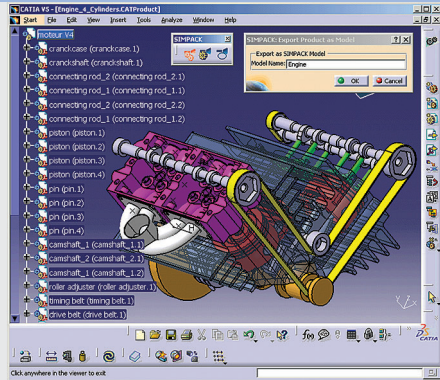
The individual bodies exported can then be used in different SIMPACK models, e.g. a car suspension model and a full vehicle model. SIMPACK models are generated by CatSIM V5 when exporting assemblies from CATIA V5.

All parts of models are exported including their absolute positions and orientations. The generated models can be used as stand-alone SIMPACK models or SIMPACK substructures.

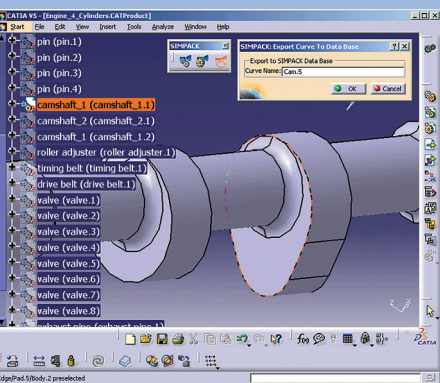
The benefits of CatSIM V5 include

- application of existing design models in SIMPACK simulations,
- the elimination of time consuming and error prone manual data input when generating simulation models,
- quick and easy updates of the simulation model after design changes
- and an improved insight into the design, due to animation and interference analysis results based on simulation data.

CatSIM V5 will be available in early 2005.



Exporting a CATIA V5 Assembly with CatSIM V5



Exporting Contact Geometry with CATIA V5