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## STAR-CCM+ v8.06 Preview: Breaking Down the Barriers Between CAD and Simulation

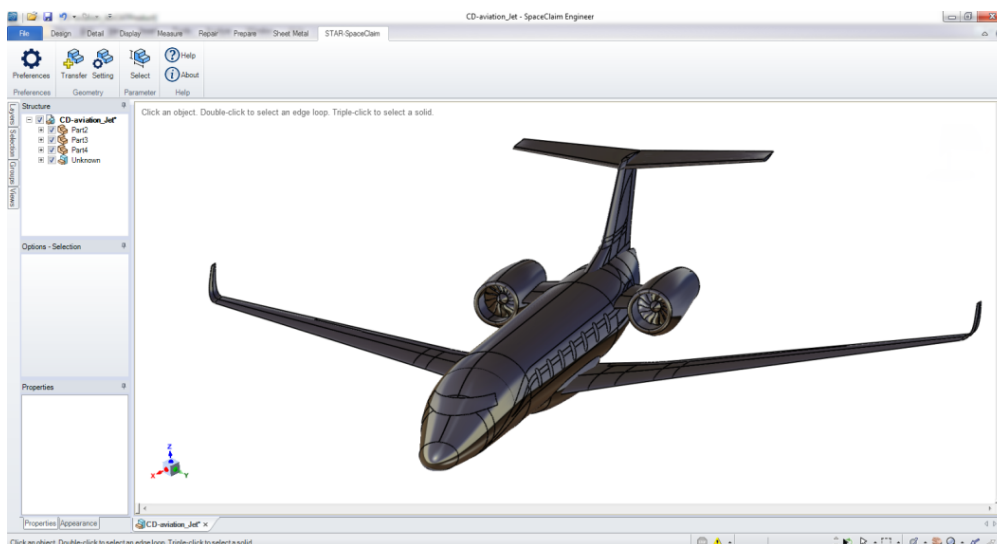


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October 10, 2013, 4:57 am

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For years, I have seen the challenges faced by the product development teams in companies of various sizes across all industries. Amongst those challenges, two in particular stand out: One is the ability to perform simulation earlier in the product development cycle and the other is focused on improving collaboration between the design and simulation teams. Addressing the latter of these has been difficult due to a "brick wall" that has always existed between the design and simulation teams due to a lack of interoperability between CAD and simulation software tools. Although software vendors have, over time, proposed various solutions to this problem, until now none have offered a scalable solution set that could address these issues elegantly for the broad range of simulation problems faced in industry.



A 2011 Aberdeen study identified the top two business pressures that have been a big challenge for manufacturers: shortened development schedules and better quality/reliability. Our own customer survey revealed that we did well in addressing these challenges by helping them reduce the number of physical prototypes and provide better insight into underlying phenomena thus improving product quality and helping customers get their products to market faster.

The Aberdeen study also observed two key trends in its report:

- Enabling simulation early in the design cycle
- Integration of simulation and design

This may be all too familiar to many of you as engineering teams in various companies have tried different methods and tools to integrate their design and simulation functions. We, at CD-adapco, have reached the cusp in providing maximum flexibility in software tools and processes that engineering teams need. Our flagship solution, STAR-CCM+ as well as our CAD Client add-ons are designed in a way that strongly support these trends shattering the barrier between the teams.

CAD Clients are CAD-embedded solutions designed to seamlessly integrate the power of STAR-CCM+ with existing CAD environments. CAD Clients are available for CATIA V5, Siemens NX, PTC Creo, Creo Elements/Pro, SolidWorks, Autodesk Inventor and SpaceClaim. The purposes of these CAD Clients are at least three-fold:

- Perform upfront simulations within the CAD environment thus providing the ability to do it early in the product development cycle empowering designers and engineers
- Perform sophisticated simulation within the CAD software through the use of intuitive options and STAR-CCM+ templates developed by analysts or methods? experts
- Natively transfer CAD geometry from the CAD software to STAR-CCM+ preserving the data structure, part/assembly structure, naming, design parameters, etc. to eliminate geometry clean-up downstream (a typical step in most simulation workflows) and to allow for geometry modifications by modifying native CAD parameters and for downstream optimization

In the upcoming release, we are making huge strides in helping companies compress product development schedules by delivering optimized designs through improved workflows. One is the addition of STAR-SpaceClaim, a new CAD Client, and the other is a much-awaited enhancement that includes support of bi-directional parametric design changes to facilitate design exploration and optimization using the STAR-CCM+ add-on, Optimate+ .

Users will now be able to transfer native CAD geometry to STAR-CCM+ and be able to modify geometry via native CAD parameters from within CAD software or from within STAR-CCM+. Since geometry is associative with the simulation model, any changes in geometry will be automatically reflected in the simulation model. As this process doesn't involve any manual geometry tweaks, simulation can be run more often early in the development cycle by simply changing the parameter values. Until now, optimization could be performed only with STAR-CCM+ geometry parameters using Optimate+ without using any 3rd party solutions. Now, as native CAD parameters can be directly accessed from within STAR-CCM+, Optimate+ can drive CAD parameter changes and do multiple simulation runs until the desired objective is reached.

STAR-CCM+ v8.06 will be released this fall. Stay tuned for updates in the weeks to come.

### **Products:**

[STAR-CCM+®](#) [1]

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CD-adapco is the world's largest independent CFD focused provider of engineering simulation software, support and services. We have over 30 years of experience in delivering industrial strength engineering simulation.

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