

viewpoint

A BETTER WAY TO EXCHANGE DIGITAL DESIGN DATA

Today's auto industry depends on a constant flow of digital design data among suppliers and automakers. These computer-aided design (CAD) files express the detailed three-dimensional designs of components and sub-systems in the vehicle. CAD files can be used to create tool paths, meshes for stress analysis and detailed drawings for manufacturing. Most often they are used simply to help visualize how one part interacts with others. Will a new seat back recline without bumping into interior trim? What space is available behind the instrument panel for a fan housing?

When checking for part-to-part clearances or mating conditions, designers need only the overall shape of neighboring components—not their entire digital description. Yet to get and give shape data, suppliers must continually transfer the complete design file to suit the requirements of each OEM's CAD and PDM system.

Now Siemens' UGS PLM Software division is introducing UGS Synergy, a program built on Teamcenter that enables users to work more efficiently with compact "JT" files and still be compatible with the industry's major CAD systems. Tony Affuso, chairman and CEO of UGS PLM Software, explains.

Why switch to JT files?

Most design work is spread out over lots of suppliers. You may be working on a specific component, but doing so requires context. Suppose you were designing a fuel line. You'd use CAD to create a three-dimensional design representing the fuel line. To do this you'd also need to know the shape and position of the engine to ensure you did not rub against anything else.

Downloading a full CAD representation of the engine has been the usual solution. But these files are very large and contain far more detail than you need. If the designer of the engine uses a different CAD system than you're using, then you have to translate the file to make it usable.

About 80% of design situations need only geometry to create context for the designer to work in. JT files aren't a substitute for CAD. But using this compact file format to assist the design process can help the supply base dramatically simplify their design exchange requirements.

How would cost be impacted?

We recently commissioned CYON Research to do an analysis on the potential impact of an industrywide move to lightweight JT files. The study puts the cost reduction at close to \$1 billion per year in the supply base alone. That

cost currently is incurred by suppliers and eventually makes its way into the parts prices. The shift to JT could have an immediate impact on the suppliers' efficiency, and costs would be bled from the system over time as suppliers implement and leverage this new process.

Are there additional benefits?

There are several. The UGS Synergy program frees suppliers to design parts using the single CAD system best-suited for them rather than necessarily dealing with the variety of systems their customers use. This will encourage the suppliers to build knowledge into their design environments. Ultimately this optimization can be leveraged globally for a greater return on their investment.

A JT file, which is typically less than 20% of the size of the original CAD file, is essential when doing collaborative design work in developing countries that lack high-speed data transfer capacity.

JT files also help protect intellectual property. They strip out the detailed parameters embedded in CAD files, so

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competitors can't "mine" a JT file for design knowledge as they could with an authored CAD file. Also, by publishing a reference to the JT file format, we have ensured its long-term viability as an industry standard.

When will the UGS Synergy program be ready?

That's the best part. The software components have all been around for awhile. We're just bringing them to bear through this program to solve this specific problem. We will formally present it to the auto industry on June 26.

We began working on this program two years ago in cooperation with our Automotive Steering Group—17 premier automakers worldwide, many of which use our Teamcenter product to manage their product development process and use JT files for visualization. Data exchange has been a significant and growing issue, and they asked us to recommend a solution. We've been running production pilots with no technical issues for 8 months in a thorough test program that involves an OEM and two key suppliers.

To learn more about how the UGS Synergy program can help you, contact David Taylor, Director of Automotive Marketing for Siemens' UGS PLM Software division by e-mailing him at david.taylor@siemens.com or calling (734) 452-2551.