Siemens PLM Software Leverages Crowd Sourcing to Promote Solid Edge and JT

CIMdata Commentary

On October 24, 2011, Siemens PLM Software (Siemens PLM) announced a partnership with Local Motors, an American car company employing a distinctive, collaborative approach of *crowd sourcing* to vehicle design.[1] While Local Motors calls their design methodology *co-creation*, it is known more broadly as *community-based design*. The approach leverages a global, open, design community that contributes to the definition and design of an automobile. On November 11, Siemens PLM followed with a second announcement that they will offer all contributors to the Local Motors' automotive product designs a new, exclusive streamlined version of Solid Edge software for a monthly subscription fee of $19.95 beginning January 1, 2012. Siemens PLM indicated that Local Motors would establish a limited number of these subscriptions using a trial version before the start date.

In discussions with CIMdata, Siemens PLM noted their in-depth talks with the leaders at Local Motors, where they jointly defined the list of CAD modeling functions that contributors would need. Siemens PLM then packaged that subset of the full professional version of Solid Edge, naming it Solid Edge Design1. The solution combines the necessary 3D part modeling with synchronous technology and core assembly modeling functions using a dedicated file format specific to Design1, in a move similar to CAD applications packaged for education. In the Local Motors' design environment, collaboration between engineers who model using Design1 and those using other modeling applications will be done using JT, Siemens PLM's visualization technology. Local Motors provides contributors a no-cost, browser-based and browser-independent, 3D viewing experience based on JT.

Design1 can open any commercial Solid Edge file as well as other proprietary CAD formats. Once a model is filed in Design1, however, it is constrained to use within Design1. Design1 also has the ability to open and save industry standard formats including JT, STEP, IGES, and Parasolid. This flexibility allows Design1 users to download and incorporate any of the numerous standard 3D part files available on the web, while concentrating the use of Design1 in the Local Motors environment—as well as possibly accessing other packaged solutions in the future. The power of synchronous technology will let users of Design1 modify and integrate imported data as needed.

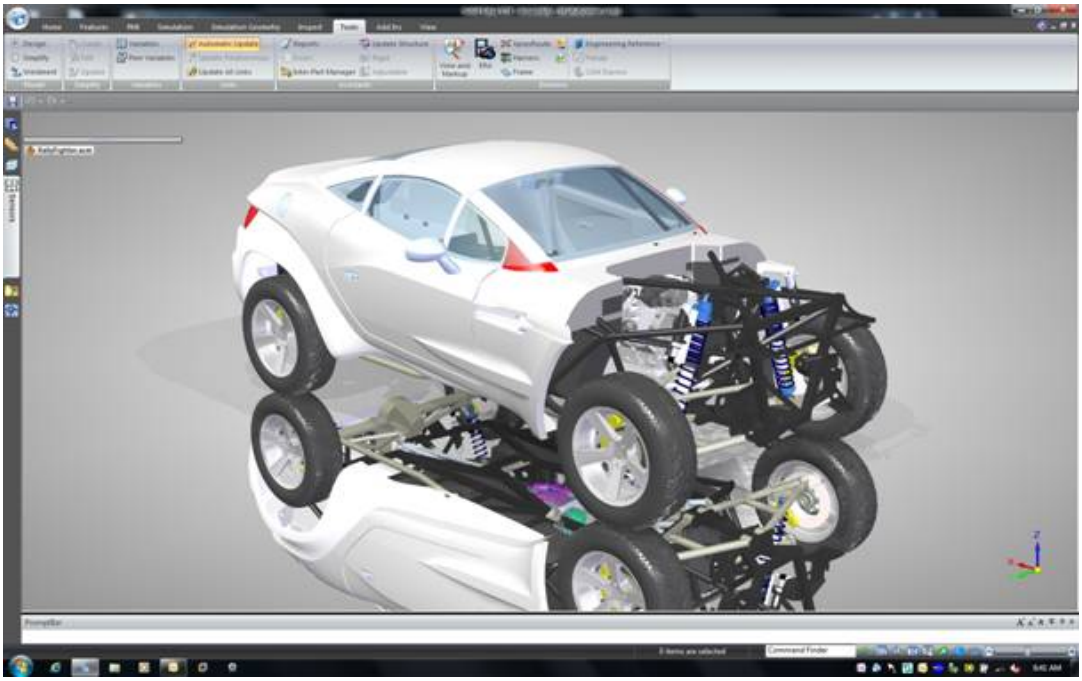
Key to Siemens PLM's involvement in this new product design approach will be the acceptance of Design1's user interface by the wide range of global users involved in Local Motors' product development. Siemens PLM has long positioned professional Solid Edge as a leading mainstream CAD modeling product by highlighting its ease of use. Design1 makes the same user interface available to both professional and amateur car designers around the world. Designers not already familiar with the Solid Edge interface will no doubt weigh in publically on its usefulness and intuitive interface.

[1] For more information on Local Motors, see www.local-motors.com.

Local Motors' Co-Creation

Local Motors allows any interested individual to join its design community. All participate in and contribute to the design and development of a new vehicle; additionally, many can and will monitor designs and competitions as they evolve. The community can view, analyze, and comment on other designers' 3D models from within one browser window. While all CAD formats will be accepted and downloadable from the Local Motors website in their native format, it is expected that most major CAD formats will be converted into the standard IGES format and the Solid Edge format for download. As Local Motors goes forward with the Solid Edge Design1 implementation, they will convert CAD models to the JT format and display them on the Local Motors website.

The company produced its first vehicle—the Rally Fighter, an off-road desert racer with on-street chops—using this crowd-sourcing approach, and was recognized in Popular Science, Wired, and Popular Mechanics magazines.



Local Motor's Rally Fighter—A SolidWorks Assembly Imported Into Solid Edge Design1 for Editing Using Synchronous Technology
(*Courtesy of Siemens PLM Software)*

One of the first results of its partnership with Siemens PLM will be seen with the Local Motors' Open Electric Vehicle project, created to design a reusable open source chassis that can be included in electric vehicle creation. Local Motors also plans to build micro-factories, breaking ground with advanced small-volume manufacturing, in regions where demand is highest. The vehicles will be built and sold from the micro-factories on a just-in-time basis. With this approach, designers can actually participate in the construction of the car. Local Motors believes both the products and process are sustainable. They market their company and process stating, "The development and manufacturing process dramatically reduces waste while maintaining the flexibility to incorporate new, efficient technologies as they emerge."

Positioning Solid Edge Design1

The Siemens PLM team positions Solid Edge Design1 midway between free or very low-end design modeling software with admittedly limited capability, and the more expensive, full-featured design applications, such as professional Solid Edge. Acknowledging that automotive and design enthusiasts who contribute to Local Motors' product designs require a level of real-world, accurate modeling tools, Siemens PLM has packaged what they (and Local Motors) believe to be the appropriate subset of capabilities. In comparison with competing free solutions, Design1 offers precision solid modeling with unlimited model size, and provides both read and write capabilities of standard formats including JT.

One of the challenges Siemens PLM will face with the Design1 solution is the potential for its end users to call for added functionality. Siemens PLM will need to maintain the solution as a true subset of professional Solid Edge in order to avoid eroding sales while keeping Design1 users happy and productive.

Crowd Sourcing and the Future of Design

Local Motors presents a somewhat unique situation in that there are numerous car enthusiasts worldwide who are eager to participate in the design of a new vehicle. However, the application of crowd sourcing as a viable business model across most design products remains questionable. A simple web search on *crowd sourcing* will identify extensive concerns with its reliability in business, especially if a company is under time pressure in delivering a product. In addition, the expected demands for compensation from the contributors will likely complicate its practical use. Still, crowd sourcing remains an intriguing approach for generating new ideas and new design solutions. Managing the crowd may be the most important aspect in the future, leading to *crowd control and sourcing* as the next iteration of the concept.

About CIMdata

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