

Analyzing Analysis Part 2

From novice to expert, FEA users are sure to find improvements that simplify their lives.

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With the dual constraints of time and money hovering over every engineering project, finite element analysis (FEA) users have a long wish list of capabilities that would make their jobs easier. Is anyone paying attention? In this article, we continue the task begun in the December 2005 issue of *DE* looking at vendor activity in the FEA world.

CAD AND FEA MARRIAGES

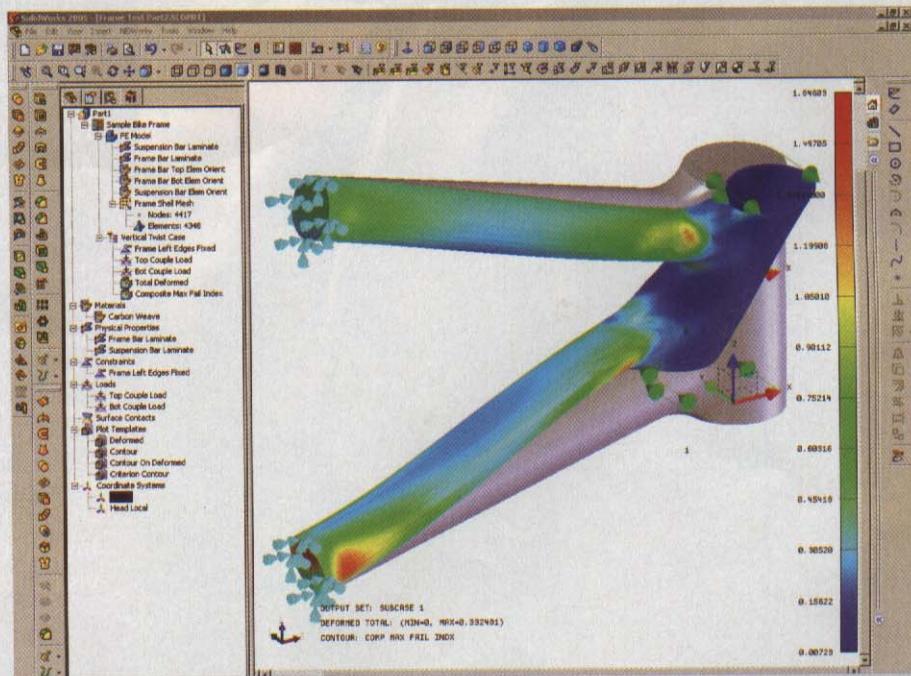
How much could (and should) CAD packages work directly with FEA software? The answer is, it depends on whom you ask. CAD designers doing FEA have different needs than FEA experts working with CAD models, so the details of "interaction" and "interoperability" vary according to vendor viewpoints and implementation.

Tomi Mossessian, president of Plasso-Tech, lists some benefits of tight couplings. "Solid integration of FEA simulation with CAD data is of such interest to many users, we've gone far beyond the traditional integration to capture full feature and dimensions of the model. This makes parametric simulation and what-

if studies far easier than ever before."

Users also may want or need to remove specific details that could result in long analysis run-times, and some pack-

ages simplify this step. John Buchowski, a director of product management at PTC, explains, "When CAD and FEA tools are not fully integrated, design engineers



This composite laminate analysis of a portion of a bicycle frame was modeled with NEIWorks from Noran Engineering embedded in SolidWorks and was solved by the NEINastran Engine. It illustrates the trend of embedded FEA in CAD. The NEIWorks FE entity tree provides capabilities similar to the SolidWorks environment, making FEA as easy and powerful to use as designing in SolidWorks.