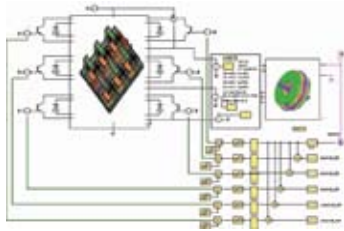


Electromagnetic analysis

Ansoft's Maxwell v11 3D electromagnetic analysis software enables engineers to characterize the performance of electromechanical components used in off-highway and industrial systems. Design parameters including force, starting torque, inductance, flux level, and capacitance can be calculated using v11's graphical interface and desktop environment. Features



include integrated parameterization and optimization, model resolution, healing techniques, and electrically aware meshing that allow native models to be imported and analyzed. Users can run Ansoft's RMXprt software to calculate machine performance, make sizing decisions, and perform analyses to calculate various parameters including torque versus speed and power loss.

Image analysis

Sensors Unlimited offers imaging demonstration software that allows full operational control of the high-speed windowing functions of its shortwave infrared (SWIR) MiniCamera and Windowing camera. The SUI image analysis software is included with SWIR cameras and features full control of four preset regions of interest or windows in the frame's center. Users can also establish variable windows and can select position, size (up to 640 x 512 pixels), and shape as well as perform image enhancements and save images in movie format. The PC-based im-



age acquisition, analysis, storage, and retrieval software is suitable for near-infrared imaging applications including image capture of fast-moving objects, SWIR motion analysis, and thermal imaging in the industrial, military, and agricultural industries.

Real-time testing

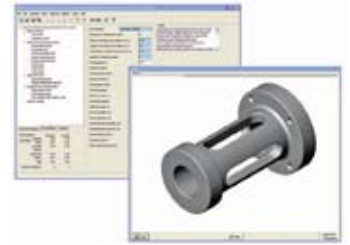
Mechanical Simulation's CarSim RT (real-time) testing software is suitable for a range of hardware-in-the-loop suppliers. It simulates the dynamic vehicle behavior of light trucks and utility vehicles, while the company's TuckSim RT software simulates behavior of heavy-duty vehicles with dual wheels, asymmetric steering systems, multiple axles, and single or multiple trailers. The programs animate simulated tests and generate over 500 input variables that can be plotted and analyzed. Vehicle and chassis settings can be



optimized with any design of experiments software. The math models run with a high efficiency, while the RT versions are slowed down to match real-time exactly. Live plotting and analysis options can be applied to the model.

Design software

Boothroyd Dewhurst launches DFMA 2006, an updated version of the company's Design for Manufacture and Assembly software that includes both the DFA Version 9.3 and DFM Concurrent Costing Version 2.2 modules in an integrated suite. The software guides users through simplifying a product design, then estimates assembly labor and part manufacturing costs and isolates the major cost drivers associated with a range of choices for part manufacture and finishing processes including sheet metalworking, struc-



tural foam molding, plastic extrusion, blow molding, and cold and hot die casting. Updated features for estimating costs include a printed circuit board process that incorporates cost models for bare board manufacture and assembly of the board as well as an automatic assembly process that estimates the cost of assembling a product on a high-speed machine.

Preprocessing releases

Fluent offers upgraded releases of TGrid 4.0, GAMBIT 2.3, and 3Matic-for-Fluent 1.0. The three enable users to proceed quickly from CAD geometries to Fluent CFD solvers. TGrid 4.0 adds Surface Wrapper to its meshing capabilities. Users can wrap multiple geometry files from several sources into a single surface mesh, and automated functions optimize the process. The 3Matic-for-Fluent software is a conditioning module for converting hundreds of files from mixed geometry sources in CAD or faceted formats into a



triangular meshing format for Surface Wrapper. A set of CAD readers in GAMBIT 2.3 allows users to bring native geometry into GAMBIT more effectively. Operations such as cleanup, construction, and design modification work directly on all geometric representations, and automated tools improve meshing speed, quality, and size distribution.

Visualization computer

Linux Network's LS Visual Supersystem offers a rendering rate of 1.5 billion polygons per second while running **Computational Engineering International's** EnSight DR. When the system's processing unit count is doubled, it achieves superlinear scaling and a 589 million polygon model is processed, enabling large data sets to be visualized



in their entirety and improving the system's performance. The LS-V delivers high levels of visualization power and work throughput and features comprehensive integration, tuned applications, improved graphics and computational power, and reduced complexity and costs. The system is being delivered to the **Army Research Laboratory** and has been ordered under the **Department of Defense's** High Performance Computing Modernization Program.

Precision software

GTA400 Precision Farming PC software from **AGCO Global Technologies** improves a farmer's ability to work with field data and to plan and carry out single

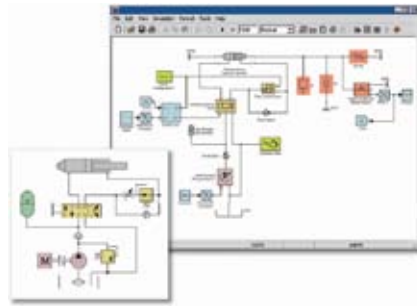


or variable rate application of crop inputs. The entire GTA suite simplifies the gathering, transferring, and analyzing of data from tractor- and combine-mounted data sources. GTA400 software is universally compatible, brand-neutral, and gives farmers full control of data.

Capabilities include layer management, zone creation, data import and classification, nearest point interpolation, and creation of planned and completed job maps. Users can visually compare multiple maps by overlaying images, such as a yield map over soil test values, and can create custom maps from imported data sets. Zone maps can be exported to PDAs for field scouting or in-cab use.

Hydraulic system simulation

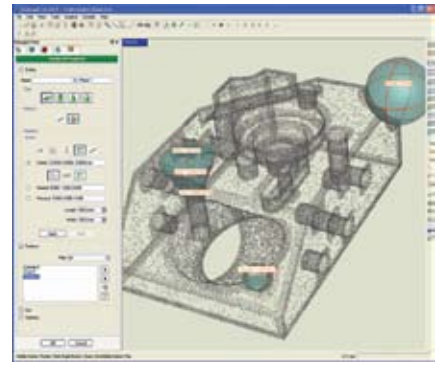
SimHydraulics software from **The MathWorks** allows users to model and simulate hydraulic control systems within the Simulink environment and enables engineers to develop a range of systems, including heavy equipment positioning, by performing multi-do-



main modeling and simulation. SimHydraulics allows developers to model and simulate controllers and plant models together and provides the hydraulic building blocks to calculate pressure and flow through standard and nonstandard components. It includes capabilities to model and simulate the conversion of hydraulic power into driving torques and forces for mechanical motion, the effects of opening and closing valves, and simple mechanical components. The software also provides a library of common hydraulic fluids.

Digital reconstruction

Geomagic releases Geomagic Studio 9 digital reconstruction software offering 3-D feature-based modeling, advanced color texture generation, and improved versatility with user-defined patch layouts. The tool automatically processes 3-D scan data and creates accurate models from any physical part for various applications including reverse engineering, design, and analysis, and it is suitable for mass production of customized devices and build-to-order manufacturing. A macro system adds logic and flow control to automation scripts, and users can define their own workflow processes to reduce time-intensive tasks. Other



features include an open workflow, the ability to reconstruct geometry, and the flexibility of optimized manual creation of 3-D features or geometric shapes. An advanced color feature converts per-vertex color models to representations that use texture maps to retain the full color resolution.

Dual-core supercomputer

The Dual-Core **Intel** Xeon processor 5100 from **Linux Network** will be leveraged in a Linux Advanced Technology Cluster ordered for the **Army Research Laboratory** Major Shared Research Center. The system is part of the HPCMP Technology Insertion 2006 program to modernize the **Department of Defense's** high-performance computing capabilities and is expected to be among the world's twenty most powerful super-



computers. The system is a 1024-compute node cluster with 4096 3.0 GHz Intel Xeon 5100 Series cores for computation and will bring the center's total computational capability to over 100 TFLOPS. Other features include 112 3.0 GHz cores for log-in, storage, and administration, 8.5 TB of memory, and 260 TB of disk.