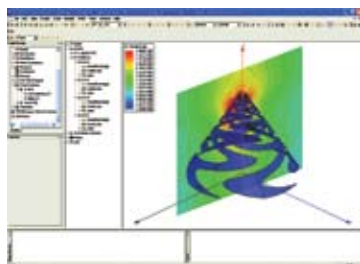


## Electronics design

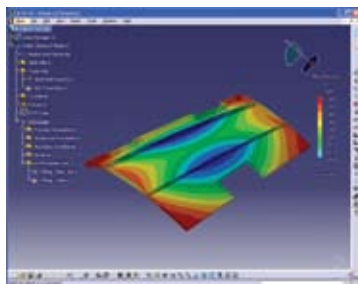
Ansoft's HFSS v11 software features higher-order hierarchical basis functions combined with an iterative solver that provides accurate fields using smaller meshes and more efficient solutions for large multi-wavelength structures. A new fault-tolerant finite-element meshing algorithm allows this version of HFSS to simulate very complex models two to five times



faster using half of the memory compared to previous versions. HFSS is used in designing high-performance electronic devices that are more portable, smaller in size, and operate at higher frequencies. These devices include RF/microwave components, on-chip passives, printed circuit board interconnects, antennas, and integrated circuit packages. HFSS v11 is available on the following operating systems: Microsoft Windows XP Professional; Windows XP x64 Edition; Windows Server 2003; Windows Server 2003 x64 Edition; Red Hat Enterprise Linux v3 and v4; and Solaris 8, 9, and 10.

## Cycle time reduction

PAM-RTM for CATIA V5 from ESI Group is the result of the full implementation of PAM-RTM capabilities in CATIA V5 and a long-term collaboration with industry leaders. Used in the ship building, aeronautics, and automotive industries, PAM-RTM for CATIA V5 simulates composite parts manufacturing based on liquid composite molding processes like RTM (resin transfer molding) or VARTM (Vacuum Assisted RTM). The software takes full benefit of the integration of simulation algorithms



within CATIA V5 performed on the native geometry. This application reduces the simulation cycle time by directly linking mold design and simulation results. It also allows the user to perform injection analysis directly on the CAD model, which ensures a consistent geometric dataflow in an iterative continuous improvement process.

## Development tool

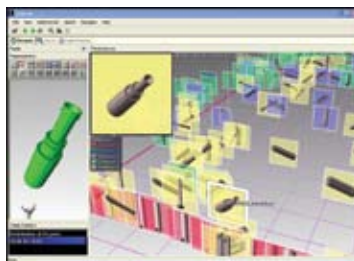
SystemDesk from dSpace is an architecture tool for software model-based development processes. Designed for complex production procedures, SystemDesk allows developers to keep track of planning, implementation, and integration relevant to multi-faceted system architectures and distributed



software systems. The tool supports team-oriented development so OEMs and suppliers can jointly share and maintain system models; provides various views of multi-electronic control unit software architecture and the selective display of model components; supports the Automotive Open System Architecture; and features a runtime environment (RTE) that enables linking of basic software via standardized interfaces in RTE generation.

## Shape-based searching

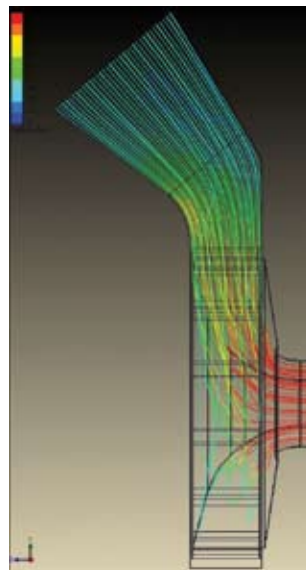
CADSEEK Polaris from iSEEK is



a shape-based CAD search engine with improved accuracy and speed to reduce the product development cycle and decrease part redundancies. The software can track similar parts and components from an assembly and allows users to highlight a single part and initiate a search to locate replacements. Features include a virtual reality-inspired billboard navigator that provides a complete view of CAD databases in a 3-D space; metadata or text search mechanism that allows users to include text in the CAD search; thin client Web interface and portal that permits users to search, browse, download, and upload components via a catalog on the corporate Web site; and a 3-D Web crawler to locate and assimilate 3-D models.

## Flow simulation

Flomerics' EFD family of CFD software developed a simple design that improved the plenum



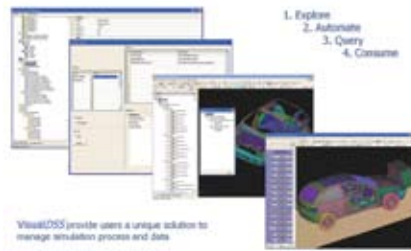
manufacturing process of **Ingersoll Rand Energy Systems'** MT250 microturbine engine. In the past, according to Ingersoll Rand, evaluating new designs required costly rig testing that made it impractical to evaluate a wide range of alternatives. With EFD software, multiple alternatives can be evaluated in a time-efficient, cost-effective manner without cutting any metal. EFD.Pro works inside Pro/Engineer CAD software and automates the process of converting CAD models into CFD models for flow simulation.

### CFD analysis

The STAR-CAD Series V4.12 from **CD-adapco** is a range of CAD and PLM-embedded simulation environments that allow engineers and designers to perform advanced CFD analyses. Using the power of associativity, any design change made in response to the results of the simulation is reflected almost immediately in the CFD solution. Solutions are updated without additional user intervention. This version of the STAR-CAD series includes: STAR-CAT5 (CAAV5-based software) for CATIA V5; STAR-Pro/E for Pro/Engineer Wildfire; STAR-NX for NX; and STAR-Works for SolidWorks. The STAR-CAD series is also available on native Windows 64-bit platforms under Windows XP allowing interaction with the 64-bit native versions of the CAD and PLM environments and providing users with the ability to run even larger models.

### Simulation-based design enabler

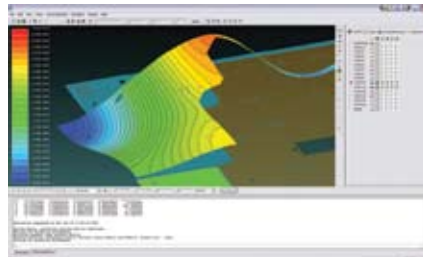
**ESI Group's** VisualDSS is an end-to-end decision support system for CAE. VisualDSS enables companies to build and manage simulation models for multi-domain usage, automate processes and workflow, manage simulation content and data, and provide knowledge-based decision support and automated reporting. Capabilities of VisualDSS include ways of building and maintaining the bidirectional link between CAD data stored in PLM systems and simulation domains. It allows transferring design and engineering modifications to the extended multi-domain team, thus enabling data traceability throughout the development process and more. VisualDSS also features a data-persistence environment, which gathers the simulation data from the



different applications used during the whole simulation life cycle. VisualDSS is suitable for small, medium, and large companies in the heavy industry and defense markets.

### Electromagnetic field simulator

SIwave v3.5 from **Ansoft** is a full-wave electromagnetic field simulator designed for signal integrity, power integrity, and electromagnetic interference analysis of high-speed printed circuit boards (PCBs) and integrated circuit packages. This new version features a finite-element-based dc solver optimized for extraction of power rail geometry in low-voltage/high-current PCB package designs. Voltage and current distributions in all



relevant geometry are viewable, including vias and bond wires. Voltage drop and current flow information is available in tabular format. Using Ansoft's adaptive mesh refinement technology, SIwave v3.5 is designed to alert users of bond wire and via electromigration damage prior to the fabrication of a prototype.

### Test management

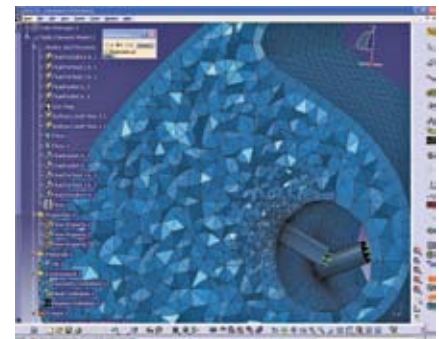
Release 5.3 from **dSpace** includes a new version of Automation-Desk test management software that supports reactive real-time tests on multiprocessor systems and on the DS1005 processor board. Version 1.5 of the Real-Time Interface (RTI) CAN MultiMessage Blocksets, combined with the ControlDesk experiment software, allows CAN raw data to be monitored, including filtering, and



logged to a CSV file. Version 2.2.2 of the RTI Bypass Blockset supports additional I/O boards for access to electronic control units via the CAN Calibration Protocol and XCP on CAN: the DS2202 board, the DS2211 board, and its predecessor the DS2210.

### CFD tool

Version 3.0 of Fluent from **ANSYS** provides workflow enhancements and features that further improve the integration of CFD technology into **Dassault Systèmes'** CATIA V5 product lifecycle management environment. The improvements result in both a reduced learning curve and model setup time for the user.



Full support of the CATIA V5 VB scripting and macros enables the customization of repetitive tasks resulting in improved efficiency. Other enhancements include more streamlined update scenarios for large geometrical modifications, easier management of parallel processing, extended post-processing options, and additional user guidance and information during the case setup process.