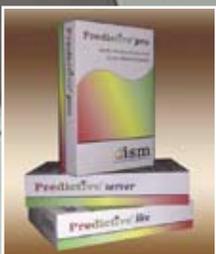




Computer Technology Spinoffs



NASA's world class computer scientists provide engineers with the computing resources and simulation tools to carry out the Agency's missions, whether it's designing new software to analyze deep space photography or building components for use on the International Space Station. Oftentimes, these same programs and projects translate into terrestrial benefits, like artificial intelligence software for complex scheduling, enhanced graphics modeling, and tools to help programmers write error-free code.



Water-Based Coating Simplifies Circuit Board Manufacturing

NASA's expertise in the synthesis of ultraviolet light-curable polyimides was a critical component that led to the platform chemistry for a waterborne, liquid photo-imagable coating ideal for the manufacture of printed circuit boards.



Hybrid Modeling Improves Health and Performance Monitoring

NASA supported the creation of a simplified health-monitoring approach for flight vehicles and equipment. The software compares equipment performance to design predictions to detect deterioration or impending failure before operation is impacted.



Motion-Tracking Technology Creates Virtual 3-D

With support from NASA, the first miniature, wearable tracker for virtual reality applications was developed. Using that core technology, a NASA partner now develops motion tracking technology used in simulation and training, entertainment applications, clinical and medical settings, and oil and gas discovery.



Design Application Translates 2-D Graphics to 3-D Surfaces

A company now uses a NASA-developed geometric flattening process in its modeling software to create fabric tension architecture for the retail, museum, and exhibit/trade show communities. The process saves time and material, and offers the ability to improve upon graphic techniques and design services.



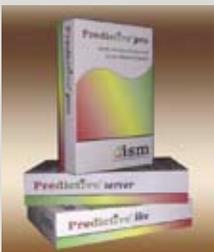
Scheduling Software Organizes Complex Scenarios

To resolve mission-critical scheduling issues, NASA helped develop a planning system that enables it to solve complex problems quickly using artificial intelligence techniques. A NASA partner has modified the software and released it as a commercial scheduling tool.



Virtual Reality System Offers a Wide Perspective

A head-mounted, high-resolution, three-dimensional panoramic display, created with support from NASA funding, is now sold commercially for high-end virtual reality applications. Virtual surroundings appear in the viewfinder and respond to head movements.



Predictive Approach Eliminates Errors in Software Code

NASA's Metrics Data Program Data Repository, which stores problem, product, and metrics data, has helped improve complex software systems and led to the creation of a new, artificially intelligent product suite used to uncover errors in the early stages of software development, thus saving time and money.



Telemetry Boards Interpret Rocket, Airplane Engine Data

Telemetry hardware used to gather and translate data on rocket and space shuttle launches has been improved through a Space Act Agreement with NASA. The boards are employed commercially for jet engine and airplane testing and development, as well as ground support for satellites.



NASA Supercomputer Supports Research Community

NASA's supercomputer, Columbia, is the result of years of supercomputing experience. A portion of the Columbia system has been made available on a broad basis to ensure the Nation's entire science and engineering community has access to the highly advanced supercomputer architecture.



Mars Mapping Technology Brings Main Street to Life

Publicly accessible geospatial views of cities—including every road, alley, and freeway—are now created with the help of 3-D data-generation software invented by NASA for imaging and navigation of the surface of Mars. The 3-D city maps are used for municipal and commercial applications.

For more information about NASA spinoffs, please visit spinoff.nasa.gov.