

Software Tool Suite for Complex System Development

Innovative Tools Provide Cost and Schedule Efficiencies in Managing Complex System-of-Systems (SoS) Development, Upgrade, and Maintenance Projects



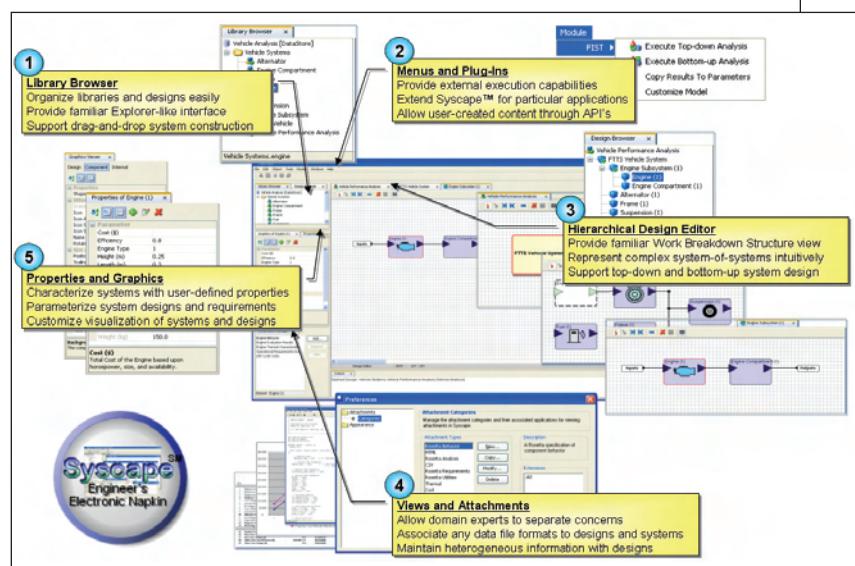
Technology and Innovation

EDAptive Computing, Inc. (ECI) has leveraged more than \$8M in DoD SBIR funding from DARPA, U.S. Air Force, U.S. Army, U.S. Navy, Missile Defense Agency, and Office of the Secretary of Defense to develop a diversified set of innovative tools, mature processes, and solutions that can be used to reduce the development, modification, and verification cycles of complex, reliable and secure DoD systems throughout the system's entire lifecycle. An independent study funded by the U.S. Air Force concluded that the company's methods and tools can result in as much as 75 percent savings in a new system development or upgrade.

EDASTAR™ is ECI's state-of-the-art tool-suite solution for capturing and validating system requirements. The tool-suite follows the system development life cycle, and greatly aids the system designer at every step of the system development process.

Syscape™ allows designers to analyze a conceptual system-of-systems — a system made up of component subsystems — and see the effects of trading off various subsystem components.

ModSpec™ provides a graphical user interface environment for developing, executing, and model-checking formal specifications of high-integrity systems, where reliability is essential. Such



systems might include ballistic missile defense, avionics, distributed networks, space probes, nuclear plants, and medical and automotive systems.

EDASHIELD™ is used to assure trustworthiness as well as generate anti-tamper logic for protecting hardware/software against reverse engineering. **EDASHIELD™** can be used to diagnose, predict, and correct errors after a system has been deployed using **EDASTAR™** created models.

SystemCritics™ provides a model-based, on-board, diagnostic and self-healing solution for autonomous error detection and correction within a system. **SystemCritics™** can be applied wherever environmental/external errors cause misdiagnosis and erroneous requests for maintenance actions.

EDAptive® Syscape™:
Enabling rapid analysis of system-of-systems

Joint Collaborations

ECI is currently applying EDASTAR™ and SystemCritics™ in the development of a two-way, machine based language translator for use by JFCOM under an ongoing NAVAIR SBIR Phase III project. Under the Air Force Mentor-Protégé program, ECI has worked with Lockheed Martin to accelerate commercial adoption of EDASTAR™ tools within their diversified set of programs.

Lessons Learned

- Maintain an on-going dialogue with existing and potential customers to understand emerging requirements and discuss potential ideas that can form the basis of new or improved solutions.
- Develop peer-to-peer relationships with other SBIR companies. These companies can be important sources of information on DoD acquisition programs, specific market opportunities, and U.S. government contracting practices as well as sources of lessons learned in research and commercialization.
- Once development is well underway, shift senior executives' focus from project execution to marketing and business development activities. Developing a detailed understanding of the marketplace and customer requirements and fostering relationships with key potential customers and funding sources are critical to transitioning technology and realizing growth objectives.
- Participate in standards development associations and industry user and working groups to drive the adoption of new technology. ECI is currently participating in the IEEE Rosetta Working Group formed under the Design Automation Standards Committee (DASC).

Economic Impact

The funds provided by DARPA and other DoD SBIR programs enabled ECI to grow from a start-up to a small company ready for the next phase. ECI staff grew from 5 in 2000 to 15 in 2007, and planned revenue for 2007 is over \$3 million. ECI has successfully transitioned its SBIR-developed technologies to two Phase III contracts (ATLAS and CURE), and received additional investments from prime contractors and several DoD organizations including the award of a sole-source IDIQ five-year/\$45M ceiling Navy (NAVAIR) contract vehicle that can be used by any agency to apply ECI tools and methods to complex systems upgrades and recertification.

About the Company

ECI www.edaptive.com is an SBA certified 8(a) small business headquartered in Dayton, OH, with satellite offices in Springfield, OH and Washington, D.C. ECI provides services and products to the military and aerospace markets. Current contract vehicles include IDIQ sole source Phase III SBIR with NAVAIR, GSA PES Schedule, and Navy Seaport-e. ■

Company Information

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