FACT SHEET

Avetec Core Research Businesses

Modeling and Simulation

Avetec is a non-profit research organization that is working to help America keep pace with the global technology economy by building a computer modeling and simulation capability and initiating educational partnerships to prepare a skilled future workforce.

Right now, Avetec and its partners are conducting modeling and simulation research that aims to reduce the cost and time it takes to design, develop and test new jet turbine engines potentially saving millions of dollars and years of development time.

This is funded through the Congressionally-directed National Aerospace Leadership Initiative because the results will save the government and taxpayers millions – even billions – in defense and energy spending.

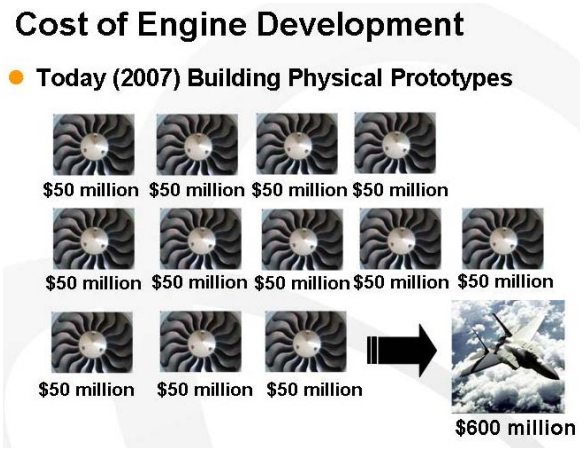

Figure 1. The estimated costs of building physical engine prototypes in today's market.

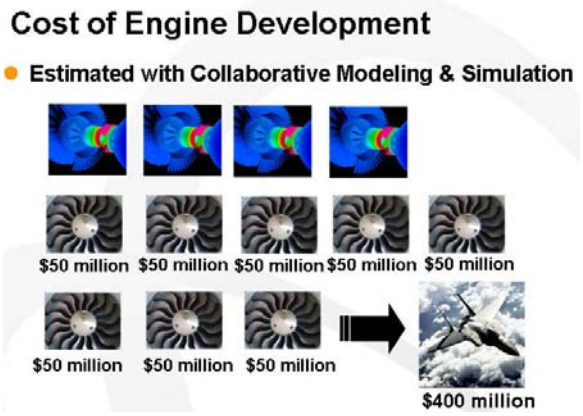

Figure 2. By using computer modeling and simulation, significant cost savings will be realized by displacing physical engine building during the early stages of development.

Data Driven Computing

Data management is the bottleneck in high performance computing. To create a successful modeling and simulation environment, Avetec must overcome data management bottlenecks.

The Data Intensive Computing Environment (DICE) was created to focus on this problem.

DICE provides the infrastructure – test beds – for large fields to be evaluated and certified to solve problems. DICE's test beds evaluate things that are not yet ready for market, but might be marketable if they meet certain criteria. The test bed will determine whether it works or not *before* it goes to market.

Most companies are not equipped to deal with this, so DICE is a tool that will help turn data into useful information to gain knowledge and understanding. Eventually, DICE will become a certification or "seal of approval," such as the UL code to designate the product has successfully passed the criteria of the DICE test bed.

DICE is funded through a line item in the U.S. Department of Defense (DOD) budget and through in-kind contributions from collaborators.

Complex Systems Integration

Avetec is working to solve multidisciplinary problems that interconnect, much like the systems of the human body. To do this, Avetec is an innovation hub that brings all interests together to build software and tools to integrate complex systems and solve computing problems associated with them.