

# Capability Statement

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## Company Overview

Avetec is a public benefit research organization. We specialize in providing world-class research, technical computing, and education and workforce opportunities. Avetec's mission is to solve complex challenges critical to American innovation in defense systems, modeling and simulation, data intensive computing, energy, cyber security, and workforce development, allowing our clients to compete in the global market. At Avetec, we accomplish our mission through three pillar programs: Applied Research, Applied Technical Computing, and Education/Workforce Development. Through these programs, Avetec is working to advance research and initiate educational partnerships to prepare a skilled future workforce.

## Services

### *Applied Research*

Avetec's Applied Research program has three areas of expertise: virtual modeling and simulation, data driven computing, and complex systems integration. Through our expertise in this area, we offer the following services:

- Advanced propulsion conceptual design
- Complex system design, analysis, and optimization
- Model-based systems engineering
- Test bed for decision support in fleet management
- Scientific consulting services
- Modeling and simulation research in propulsion system analysis and aging aircraft sustainment
- Turbomachinery gridding, process, and research
- Thermodynamic analysis of turbine and unique internal combustion engines
- Hardware in-the-loop testing
- Unmanned aerial vehicles/systems (UAV/UAS) engine design and simulation

### *Applied Technical Computing and Data Intensive Computing Environment (DICE)*

Avetec's Applied Technical Computing and DICE program provides an independent, representative test environment comprised of geographically distributed sites located in high performance computing (HPC) centers. DICE sites are connected by high-speed, real-world wide area networks. DICE provides the platform to identify, test, evaluate, and validate new and emerging technologies designed to enhance the use and management of HPC data. Through this program, Avetec offers the following services:

- HPC data management test bed
- HPC data management education and networking



- Unbiased evaluations of emerging distributed data management technologies (hardware and software)
- High speed networks to federal agencies and university systems
- HPC data management technical consulting and expertise
- Fiber optic infrastructure design, installation, and implementation
- HPC system architecture and implementation
- Assistance to manufacturers in applying technical computing services

### *Education & Workforce Development*

Avetec is dedicated to accelerating the workforce of the future through bridging the gap between education, industry, and government. Through the education/workforce development program, Avetec offers the following services:

- Cyber security workforce development and education
- Open source project-based education
- Palantir-analyst training
- Internship and co-op programs
- Faculty education and development

### **Clients**

Avetec's clients include the following entities:

- US Department of Energy
- Air Force Research Laboratory
- DoD High Performance Computing Modernization Program Office
- State of Ohio
- National Air and Space Intelligence Center
- National Aeronautics and Space Administration
- Other federal agencies and school systems
- Various private-sector firms

### **Key Personnel**

#### **Homer Smith, CEO**

Homer Smith is the Chief Executive Officer of Avetec in Springfield, Ohio, and a retired Brigadier General for the Ohio Air National Guard. Smith has been with the Avetec as a consultant since its inception in 2005 and was hired full-time as the company's Chief Operating Officer in July 2007. In January 2008, Smith was appointed President and CEO. Smith holds a Bachelor of Science in Industrial Design from The Ohio State University in Columbus, Ohio, and an Associate of Science Degree from Sinclair Community College in Dayton, Ohio. He also completed the United States Air Force Squadron Officer School, the Air Command and Staff College, and the Air War College.



### **Dr. Jeffrey Dalton, CTO**

Dr. Jeffrey Dalton is the Chief Technology Officer of Avetec where he oversees the applied research program. Dr. Dalton has over 20 years of experience in research, development, and teaching of systems design and modeling and simulation including optimal control theory, intelligent and learning control - hardware and software design in embedded systems, and developing applications in turbine engine control and health management. Dr. Dalton obtained his BS, MS, and PhD degrees in Electrical Engineering at the University of Missouri-Rolla in 1986, 1988, and 1994, respectively. He is a member of the IEEE, ASME, and AIAA.

### **Al Stutz, CIO**

Alvin Stutz is the Chief Information Officer of Avetec and co-leader of its data intensive computing division, the DICE program. He oversees high performance computing, telecommunications, and information technology in the acquisition, contract management, and operations of computing equipment. Stutz is also a Senior Lecturer for the Department of Computer Science & Engineering at The Ohio State University. He is also a Senior Adjunct Lecturer for the Department of Biomedical Informatics at Ohio State. He has previously served as Chief Operating and Technology Officer, Acting Executive Director, active Associate Director, and Director of High Performance Computing with the Ohio Supercomputer Center (OSC). He also served as the architect of the Ohio Third Frontier Network (now known as OARnet).

### **Cathy S. Balas, Executive Director, Education/Communications**

Cathy Balas is the Director of Education and Communication. She is responsible for strategic planning and implementation of Avetec's education mission, which includes developing collaborative approaches with colleges, universities, K-12, and informal education partners. Balas also serves as an adjunct professor at Wittenberg University. Balas is past Chairman of the Board of Trustees of Clark State Community College and was the Executive Director of the Tecumseh Consortium, a multi-county workforce development agency. She also served as one of three members of the senior leadership staff for Clark County, Ohio as the Director of Human Resources. Her educational background includes a B.A. from Ohio State University and an M.A. in Public Administration from Central Michigan University.

### **Dr. Dick Pritchard, Business Development Lead**

Dick Pritchard is the lead for Avetec corporate business development. He oversees marketing materials development, proposals, teaming, and development of business opportunities. He has previously held such positions as Director of Air Force Modeling and Simulation at High Performance Technologies, Inc.; Director of Federal Programs at the Ohio Supercomputer Center; and multiple leadership and management positions at Nichols Research Corporation and BDM International. Dr. Pritchard is a retired U.S. Air Force Colonel, having served 12 years on active duty and 18 as a reserve officer. He received his B.S. degree in Chemistry from Duke University and his M.S. and PhD degrees in Chemistry from The Ohio State University.

## **Certifications**

NFP 501(c)3

Tax ID #: 20. 255 34 14

Dun & Bradstreet / DUNS Number: 19 226 7230

CAGE Code: 378C9



## NAICS Codes

541600	Management, Scientific & Technical Consulting Services
541700	Scientific Research & Development Services
541710	Research & Development in the Physical, Engineering & Life Sciences
541720	Research and Development in the Social Sciences
518210	Data Processing, Hosting & Related Services
519100	Other Information Services
541990	Other Professional/Scientific/Technical Services
611000	Educational Services
611710	Educational Support Services

## Contact Information

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