Multi-disciplinary Test and Evaluation

The Texas Center for Applied Technology (TCAT) is a focus for multi-disciplinary test and evaluation within The Texas A&M University System. A non-academic technology transfer center within the Texas A&M Engineering Experiment Station, the engineering research agency for the state of Texas, TCAT has successfully managed test and evaluation programs for energy, water, environmental, and military programs. Our clients include a wide variety of customers: federal, state, and local governmental agencies; university researchers, and industrial partners; commercial companies; and land management and planning groups.

While a complete description of the capabilities of the A&M System is beyond the scope of this document, the System has national prominence in several areas of technical expertise:

- First Responder Technologies: Fire, emergency response, emergency information systems
- Energy Systems: Energy efficiency, building energy technologies, renewable energy technologies, including wind and solar energy
- Software Systems: Validation and verification, operational evaluation, enterprise threat assessment
- Transportation: Pavements, traffic, vehicular technologies
- Water Systems: Desalination, conservation, distribution systems, as well as water source characterization

TCAT's technical services capabilities include information technology, software development and testing, energy utilizing systems, renewable generation, environmental sustainability domains, and manufacturing, and include a full range of professional project management capabilities as well.

Specific examples of large scale evaluation projects include the following:

- Evaluation of Mobile Micro-Grids Installations in Border Colonias – TCAT validated operational use and performance validation of hybrid micro-grid systems installed in disadvantaged communities along the Texas-Mexico border. TCAT managed evaluation projects for both the Texas State Energy Conservation Office as well as the U.S. Department of Energy. Total project funding: $1.2M.
- Evaluation of Advanced Vapor Compression Desalination System – TCAT managed a large-scale construction and test program for the City of Laredo, Texas, on technology developed by the Texas A&M University's Artie McFerrin Department of Chemical Engineering and licensed to Terrabon, Inc. Total project funding: $1.65M.
- Data Visualization Support to the U.S. Army Operational Test Command at Fort Hood, Texas – TCAT performed tests related to tactical networks, combat radios, and purpose-built simulations. This included the development of a visual analytic framework entitled Process-oriented Data Visualization (ProDV). ProDV features an interactive data flow editor that supports a wide range of data sets as input, a library of computational modules that produce a set of multi-dimensional perspectives as output. Other support activities included on-site test support and training for ProDV users. Total project funding: $1.95M.

TEXAS CENTER FOR APPLIED TECHNOLOGY

There are many problems that require the careful and proper integration of applied technologies to find solutions. The Texas Center for Applied Technology (TCAT) was created to focus on these specific problems and to develop effective and efficient solutions. TCAT's core competency is the innovative application of existing technologies and advanced research to solve complex real-world problems.

TCAT's primary objective is to apply and test technologies to address targeted problems and engage basic research as required. TCAT has employees in a variety of locations with the ability to perform research that cuts across multiple technologies, disciplines, and cultures. The Center's employees are knowledgeable regarding customers' requirements and are ready to respond effectively to provide the best value for the customers' needs including expertise in technology insertion, technology assessments, and test and evaluation.
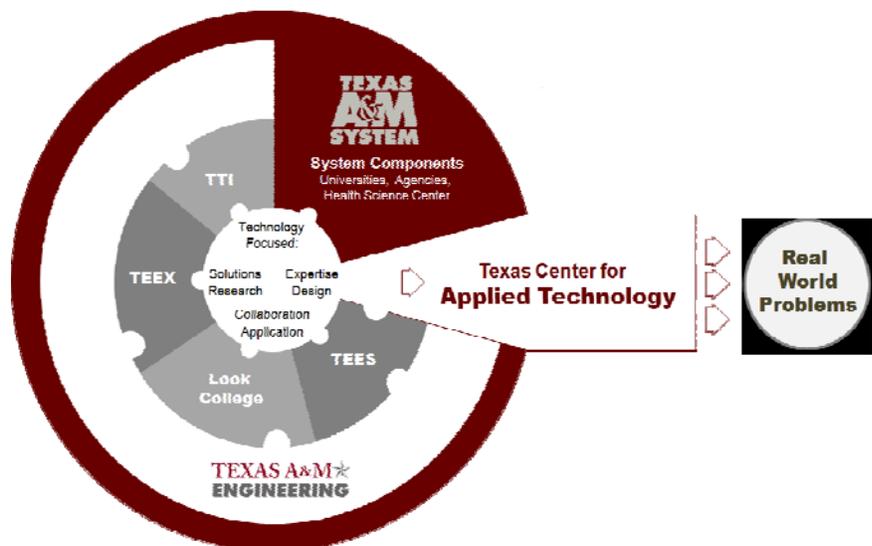
TCAT is part of the Texas A&M Engineering Experiment Station (TEES), a member of The Texas A&M University System. The A&M System is one of the largest and most comprehensive systems of higher education in the United States. Through a statewide network of eleven university campuses, seven state agencies, and a comprehensive health science center, the A&M System educates more than 120,000 students on its university campuses, conducts more than $780 million in research, and reaches another 22 million people through service each year. TEES is an engineering research agency for the state of Texas and conducts over $147 million in research annually. Because of the Center's position within the Texas A&M Engineering program, TCAT's expertise can easily be extended by rounding out its team with world class faculty researchers, as appropriate. TCAT is in an excellent position for collaboration not only with The Texas A&M University System components and their customers but with other universities, institutions, centers, and industry.

TCAT'S CORE COMPETENCIES

Energy **S**ustainability ★ **E**nvironmental **S**ustainability
Manufacturing & **S**ystems **E**ngineering ★ **I**nformation **T**echnology ★ **M**odeling & **S**imulation
Technology **I**nsertion ★ **T**est & **E**valuation

TEXAS A&M ENGINEERING

Texas A&M Engineering consists of the Dwight Look College of Engineering, and three engineering agencies, including TEES: Texas A&M Transportation Institute (TTI) conducts research and professional education in all modes of transportation. The Texas A&M Engineering Extension Service (TEEX) works to develop a highly skilled and educated workforce and enhances public safety through training, continuing education, and technical assistance.