
FAA Center of Excellence for
Technical Training and Human Performance

**CENTER OVERVIEW
AND HIGHLIGHTS**



Year 3 Overview

The purpose of the FAA Center of Excellence for Technical Training and Human Performance is to establish and manage a consortium of government, academia, and industry collaboration to evaluate and create solutions for the enhancement of the training and operational performance of all air transportation personnel (e.g., pilots, mechanics, air traffic controllers, technicians, safety operators, engineers).

<https://coetthp.org/>

At-A-Glance Metrics	Year 3 Outcomes
# Core Institutions	16
# Research Grants	70
# Principal Investigators	50+
# Subject Matter Experts	100+
# Student Researchers	70+
# Industry Partners	45
# Affiliate Members	10

FAA COE TTHP, Established August 12, 2016

Center's Industry Partners

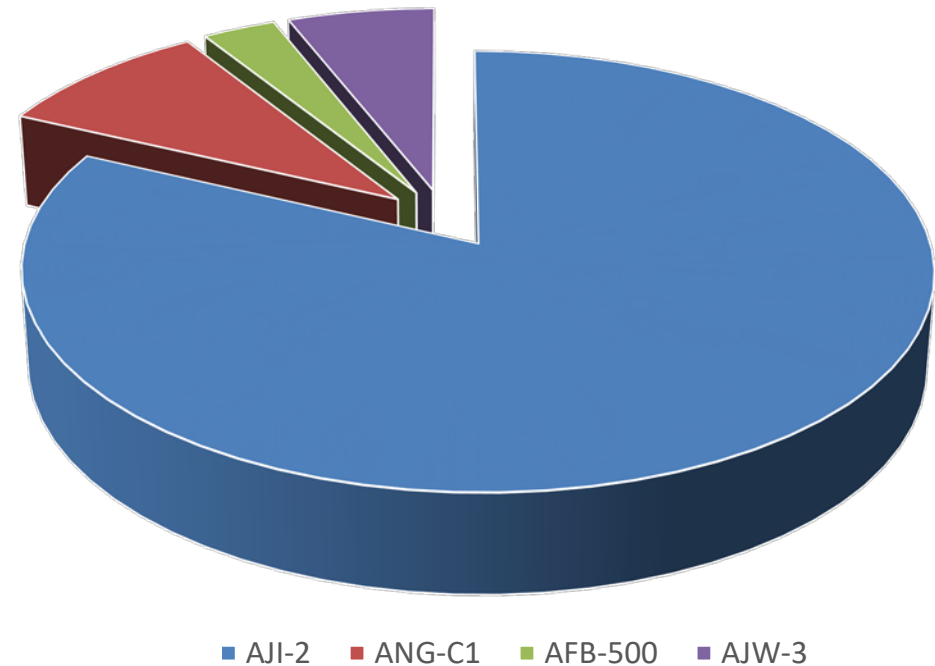
- 1st American Systems and Service
- Adacel
- Addx Corporation
- Air Traffic Simulation, Inc.
- American Airlines
- American Institutes for Research
- ATAC
- AVT Simulation
- Blackboard
- C² Technologies
- Chickasaw Nation Industries
- Christiansen Aviation
- CI² Aviation
- Computer System Designers
- CSSI
- Crew Training International
- Delta Air Lines
- Florida NextGen Test Bed
- Eduworks Corporation
- Frasca International, Inc.
- General Dynamics IT
- Hucon Global
- Instructure, Inc. & Canvas Network
- Infina, Ltd.
- JMA Solutions
- KeyBridge Technologies
- Leidos
- Metacraft
- Northrop Grumman
- Orion America Technologies
- Pilot Training System
- Robinson Aviation
- RTSync
- SkySoft ATM
- Skymantics LLC
- TetraTech
- The Ritz Group
- TransLumen Technologies
- UFA, Inc
- Veracity Engineering
- Volpe Center
- The Washington Consulting Group, Inc.

Current Funders (\$7.4 Million)

Federal Aviation Administration

- AJI-2, Air Traffic Organization (\$5.84M)
 - 27 projects
- ANG-C1, NextGen (\$650K)
 - 1 project
- AFB-500, Flight Standards (\$372K)
 - 3 projects
- AJW-3, Flight Program Operations (\$549K)
 - 6 projects

Center of Excellence Funding Trends



**** Per Public Law 101-508: The federal share shall be 50% of the costs of conducting research activities.**

Updated FAA COE TTHP Research Roadmap

1. Workforce Development and Training

1.1 Human Capital

1.2 Management and Systems

1.3 Instructional Design and Training Delivery

1.4 Technology

2. Analytics

2.1 Data Aggregation and Data Mining

2.2 Statistical Forecasting

2.3 Optimization

3. Safety

3.1 Situation Awareness

3.2 Hazardous Conditions

3.3 Cybersecurity

3.4 International

4. Human Factors

4.1 Perception

4.2 Cognition

4.3 Workload

4.4 Skill Acquisition

Several of our academic and industry partners have contributed to the realignment of the Center's research themes and subthemes.

The Research Strategy Task Force is responsible for working to finalize the official Center roadmap designed to outline potential projects for 2021, 2023, and 2026 to meet the research needs of the FAA, DoD & NASA.

Research Theme 1.0 – Workforce Development and Training

This research seeks to modernize content and course delivery using new technology and instructional design strategies with an emphasis on linking curriculum to specific competencies and job tasks. In addition, the research seeks to identify improvements to recruitment, hiring, employment pre-screening, on-boarding, and placement practices.



Figure 1. Application of AR/VR for Adaptive Learning Instruction of Safety Inspectors

Research Theme 2.0 – Analytics

This research collects and analyzes data from curricula, training performance records, and other sources to develop improved training solutions and enhanced operational performance metrics.

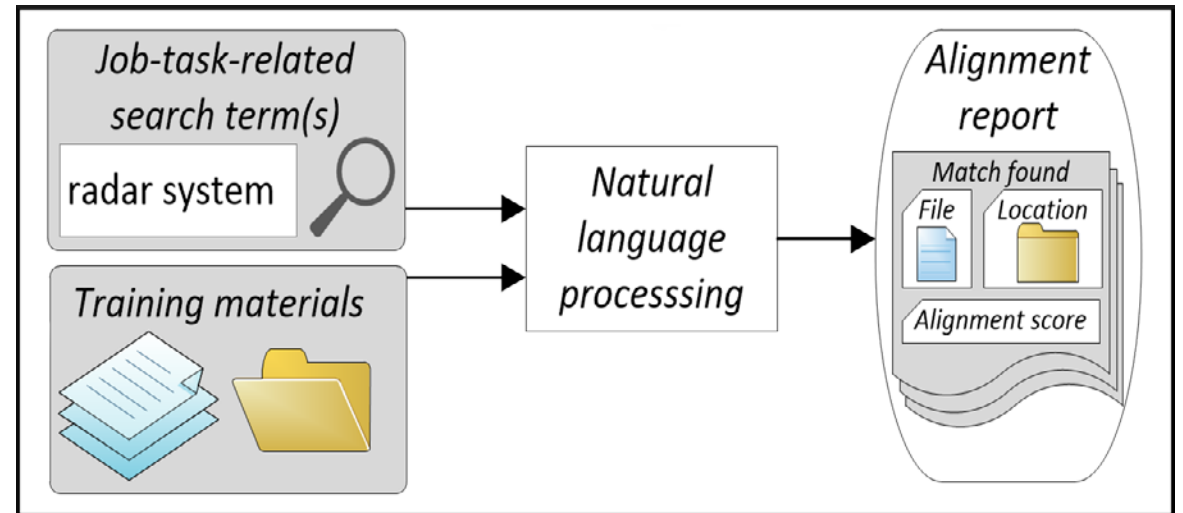


Figure 2. Analysis and Alignment of Tech Ops Job Tasks

Research Theme 3.0 – Safety

This research examines the relationships among safety, technical training, and human performance, and proposes methods of mitigating unacceptable levels of risk in identified areas.

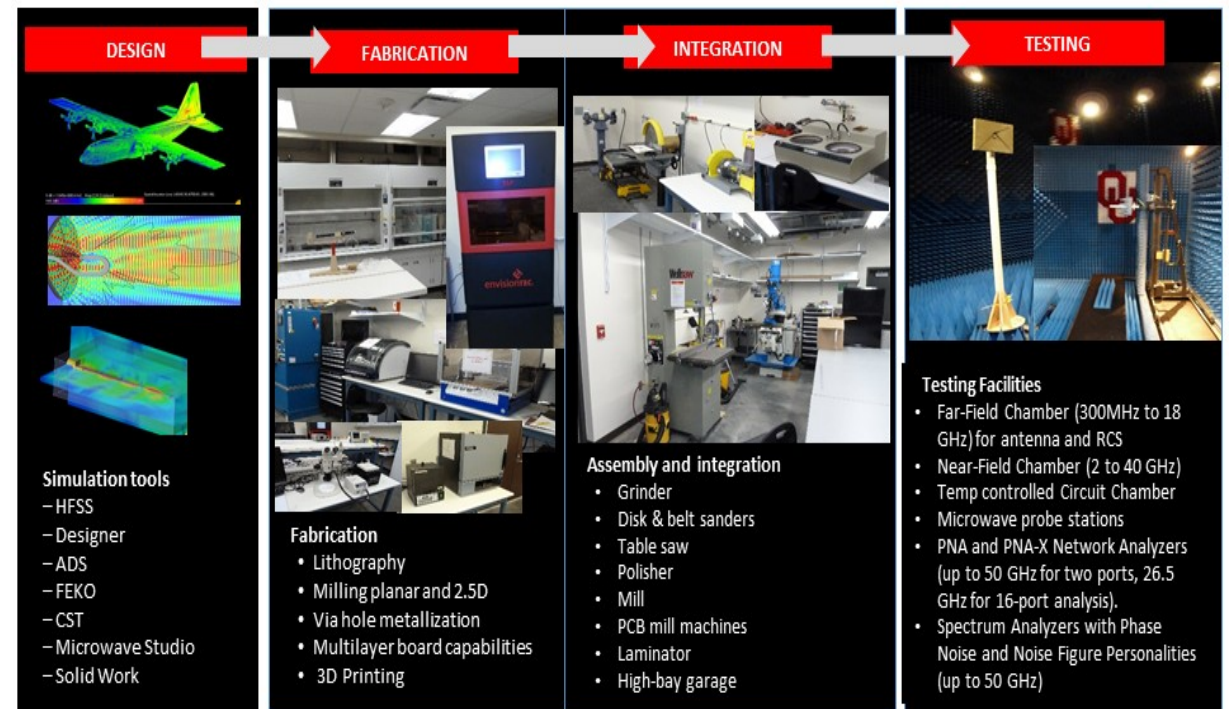


Figure 3. Feasibility of UAS Aided Flight Inspection Research Approach

Research Theme 4.0 – Human Factors

This research determines and analyzes perception, cognition, and environmental factors that impact the safe and effective performance of jobs and tasks.



Figure 4. Trend Analysis of Visual Scanning Patterns of Expert Air Traffic Controllers

Future Funder Potential and Next Steps

The FAA COE TTHP Funding Development and Partnerships Task Force is responsible for identifying and cultivating partnerships with future funders for the Center to expand funding support for future research efforts.

For example, progress has been made in sharing the benefits of the Center with FAA HR and the U.S. Air Force.