



Who We Are

The Next-Generation ERAU Applied Research (NEAR) lab, located at ERAU's Daytona Beach campus, is a research and development (R&D) facility supporting faculty, staff and students. Additionally, the lab offers consulting services for the private sector and government entities. Our team of engineers and researchers collaborate with the aerospace and aviation industry on software engineering proof-of-concept, rapid prototyping, software quality assurance, modeling and simulation, data mining and various other related research and development projects. NEAR has successfully completed a number of projects for the FAA, NASA, NOAA, and industry.



Massood Towhidnejad, Ph. D.

Director
towhid@erau.edu
386.226.6891

Carlos Castro

Project Manager
carlos.castro@erau.edu
386.226.7019

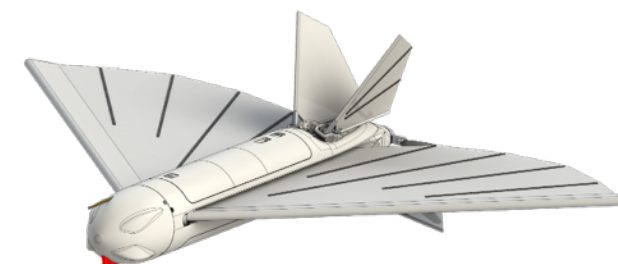
NextGen

The FAA has contracted with Embry-Riddle to conduct NextGen research and demonstrations at the Florida NextGen Test Bed on the Daytona Beach International Airport. NEAR provides engineering support, proof of concept and early implementation of NextGen technologies and systems.



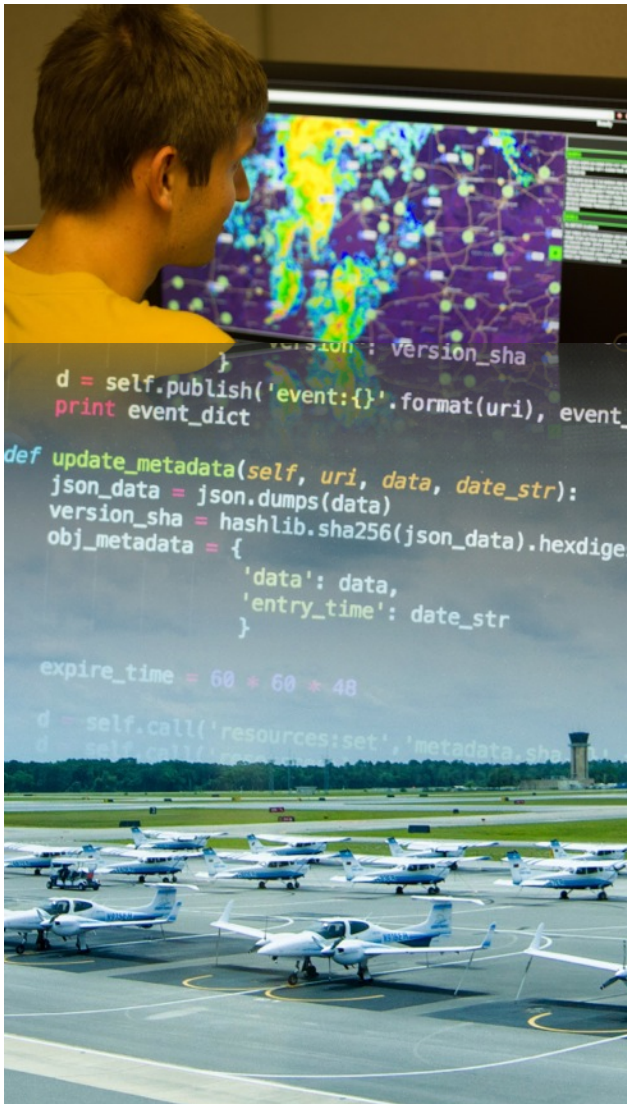
Unmanned Systems

NEAR is developing an unmanned aircraft system for hurricane research. Gale is a tube-deployable UAS designed to investigate energy transfer in the boundary layer directly beneath a storm. Carrying a variety of weather sensors, the system is deployed from a P3 Hurricane Hunter aircraft directly into the storm, and is designed to collect data for up to an hour.



Data Mining

NEAR collects an immense amount of data from the world meteorological network and the Aircraft Situation Display to Industry (ASDI) encompassing NAS flight plan data as well as ADS-B data. This data is processed and used to augment real and fast-time simulations and perform comprehensive cost-benefit analysis.



Simulation and Modeling

Fast-Time Simulation

Real-Time Distributed Simulation

Human/Hardware-in-the-Loop Simulation

NEAR provides a platform for conducting R&D incorporating human-in-the-loop and hardware-in-the-loop simulations.

Real-time simulation capabilities are also available for various applications including in-depth analysis of overall scenarios for project risk mitigation and planning.

Advanced software modeling tools such as TAAM and TARGETS allow our team to explore fast-time airspace and airport conditions and evaluate events related to runway incursions, accident investigation, airport/airspace capacity and other future air traffic management concepts.



Application Development

iEMID for iOS

The ERAU Multi-Information Display is an iOS app that visualizes aircraft information and geospatial data for real-time situational awareness.

Electronic Flight Bag

NEAR's Electronic Flight Bag app can display weather and aeronautical information directly from FAA SWIM services with real-time push updates displayed over a user-selectable map. Available for iOS, Windows, Mac and Linux.

Airline Operations Center

The NEAR Flight Operations (NFO) tool allows dispatchers to create and manage flights using SWIM in the MiniGlobal environment. The NFO seamlessly interacts with a data management service (DMS) to synchronize and manage EFB data exchange and profiles with FAA SWIM services in real-time.