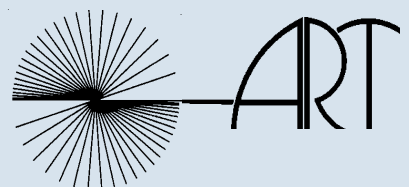


- *Software Development*
- *Flight Model Development*
- *Training & Engineering Simulators*



Advanced Rotorcraft Technology



Objective

Provide high fidelity, affordable, transportable, reconfigurable, flight simulator systems to military, and commercial customers.

Company Vision

Our goal is to maximize our engineering skills to produce fully integrated flight training and engineering simulators at a significantly reduced costs to our customers.

Mission

Advanced Rotorcraft Technology, Inc., designs, develops, manufactures, and markets high fidelity, reconfigurable, low cost, flight simulator systems to military and commercial customers.

Core Competencies

ART has over 100 years of combined rotorcraft flight dynamics modeling experience with the majority of ART employees holding a Ph.D. in Aerospace Engineering. Our unique software development and hardware background allows us to manufacture fully integrated, cost effective solutions utilizing COTS simulators thereby eliminating the need for high-fidelity dynamic modeling. Our innovative research on behalf of the DOD as well as our Cooperative Research and Development Agreement (CRADA) with the U.S. Army has enabled us to become experts in the fields of rotorcraft modeling, shipboard landings, and a multitude of specialized rotorcraft disciplines.

Products

FLIGHTLAB

Commercial (COTS) software product developed to facilitate the development and utilization of flight vehicle dynamics models in simulation applications

SIMphony

Distributed host software that facilitates integrating FLIGHTLAB models with simulator systems that provide flight cues, such as the visuals, control loaders, and motion platform, synchronized to real time.

HELIFLIGHT

Modular, cost effective, Simulator designed with COTS products to support precision flying skills training utilizing a highly detailed, dynamic model of the aircraft with a wide field-of-view visual display and a high fidelity, four axis flight control emulator to insure realistic, real time pilot cues.

REAL-TIME ROTORCRAFT MODELS

Modular, self-contained, rotorcraft dynamics models are physically based, have proven fidelity, and are capable of real-time operation on current generation PC's.

Services

In addition to our product offerings, ART has a dedicated consulting team whose expertise covers the entire spectrum of Aerospace and Mechanical disciplines, as well as Computational Fluid Dynamics (CFD).

Customers

**U.S. Navy
U.S. Army
U.S. Air Force
Lockheed Martin
Sikorsky
Northrop Grumman
NAVAIR
Boeing
L-3 Communications
Rockwell Collins
Korean Aerospace Research Institute (KARI)**

**NASA
CAE USA
Boeing
FUJI
Mitsubishi
Kawasaki
Agusta
Pennsylvania State
Georgia Tech.**

Projects

- 2GCHAS Rotorcraft technology (ARMY)**
- AVCATT (ARMY)**
- JSHIP (NAVY)**
- Flight School XXI (ARMY)**
- Rotorcraft Control System Design (NAVY)**
- High Performance Computing-Rotorcraft Performance Analysis (DARPA)**
- High Performance Computing-CFD/CSD coupling (DARPA)**
- Quiet Rotor Design-CFD/CSD Optimization (DARPA)**
- V-22 modeling (NAWCAD)**
- Sling loads handling qualities evaluation (NAWCAD)**
- Composite blade modeling (AMES Research AFDD)**
- Radar Sensor Visualization (ARMY Research ATTC)**

Company Profile

The Army's interest in ART's **FLIGHTLAB** Development Environment and solution methodology provided for an **SBIR** award to incorporate our **2GCHAS** rotorcraft technology, originally developed for the Army, into the more extensive **FLIGHTLAB** environment.

In 1999 ART and the Army established a **Cooperative Research and Development Agreement (CRADA)** under which ART would support our **RCAS** product as a nonproprietary Government research tool and the Army would support ART in modeling and validating Army rotorcraft, allowing us to retain vital data. Now they could utilize **FLIGHTLAB's** real time capabilities to integrate the models with simulators to support piloted simulation activities for research and training applications, and ART could begin a **COTS** library of helicopter models.

FLIGHTLAB blade element helicopter models are today being used in the Army's **Aviation Combined Arms Tactical Training (AVCATT)** simulators and ART is providing **FAA Level D** certifiable models for the Army's **Flight School XXI** pilot training programs.

For the Navy, a **FLIGHTLAB** blade element model of the **V-22** has been integrated with the **Manned Flight Simulator** at **Patuxent River, MD** for use in supporting **V-22** shipboard landing research.

ART's work has generated a series of **SBIRs** including modeling the interaction of the ship airwake with rotor blades and the interaction of the downwash with the airwake and the moving ship deck to provide the most comprehensive model of rotorcraft/shipboard operations currently available.

Core Advantage

For over 20 years, ART has worked with major helicopter manufacturers, DOD, commercial and educational organizations to enhance our software and modeling techniques. The high costs and years of development involved in producing Rotorcraft models will continue to prevent other companies from entering our market. Our strategic alliances with the Army and Navy allows us to accumulate vital data and use it for modeling purposes, thus producing cost effective systems. Multiple models are already developed as COTS products. Art has Copyrights and owns the Intellectual Property rights for our FLIGHTLAB and SIMphony software, used to create and run high-fidelity flight dynamics models.

ART is the only flight simulation firm that has historically focused exclusively on rotorcraft flight dynamics and is ready to supply the military with high-fidelity, low cost, reconfigurable, flight simulator systems for the training and engineering needs of its rotorcraft fleet.

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