

COMPANY OVERVIEW

*ESAERO SERVES AS THE PRIME CONTRACTOR
ON NASA'S X-57 MAXWELL
ELECTRIC X-PLANE.*



EMPIRICAL SYSTEMS AEROSPACE is an engineering and manufacturing company specializing in manned and unmanned electric aircraft. ESAero is dedicated to delivering our products and services to the highest quality. Our core functions include design, analysis, testing, validation and manufacturing.

For 18 years, ESAero has been at the leading edge of electric aircraft design and research, having been awarded 23 NASA and DoD contracts, as well as serving as the prime contractor on NASA's X-57 Maxwell electric X-plane.

CORE COMPETENCIES

- 01** EFFICIENT AND SUSTAINABLE ELECTRIC AIRCRAFT TECHNOLOGY FOR ADVANCED AIR MOBILITY AND UNMANNED AIRCRAFT SYSTEMS
- 02** AS9100 CERTIFIED DESIGN-FOR-X FOR ADVANCED AIR MOBILITY AND UNMANNED AIRCRAFT SYSTEMS



FOR MORE INFORMATION
INQUIRE@ESAERO.COM // +1.805.275.1053 // ESAERO.COM
3580 SUELDO ST. // SAN LUIS OBISPO, CA 93401



ADVANCED AEROSPACE ENGINEERING & MANUFACTURING



FAST Utility Swarm UAS



THE FIELD ADAPTABLE SUPPLY TECHNOLOGY (FAST) swarming system is a rapidly deployable and affordable platform for small payload aerial delivery. Using plug-and-play hardware, the FAST system can be quickly deployed to any area at a very low cost.

A user-friendly operating system enables fleets of vehicles operated by a single ground station to deliver 2.3 lbs of payload per vehicle over 3 miles. Designed and built in the USA with a robust supply chain and lean manufacturing techniques, large quantities of FAST systems can be rapidly deployed, even for attritable missions such as target and counter UAS tests. FAST has been demonstrated in swarms of 30+ vehicles at TRL 9.

KEYFEATURES

Demonstrated Swarming (TRL 9) // Flexible/Customizable Payload // High Value // Rapid Order Fulfillment // ITAR Compliant



FLIGHTSPECIFICATIONS

Flight Specifications

Max Flight Time (hover) 15 minutes
 Max Range 3 miles, 4.8 km
 Max Ground Speed 22 mph, 10 m/s

Vehicle Specifications

DoD Sizing Classification Group 1
 Maximum Gross Weight 8 lbs, 3.6 kgs
 Usable Payload 2.3 lbs, 1 kg
 Dimensions (with props) 29 in x 29 in x 6.5 in
 74 cm x 74 cm x 17 cm
 Battery Type 18650 Li-ion Cells
 Battery Voltage 22.2 V
 Battery Capacity 5200mAh
 Payload Options Custom Enclosure

Ground Control Station Specifications

User Interface Swarm-enabled Tablet
 Antenna Stand-alone Communication Bridge
 Modular Open System Architecture allows for multiple GCS options

VESA Counter-UAS

DESIGNED TO OUT MANEUVER a modern professional racing drone by 2-3x, and kinetically hit an intruder, VESA (VTOL Electric Small Aircraft) is designed as a flying C-UAS.

VESA has integrated advanced situational awareness capable of perception, tracking, categorization and pose tracking. Additional optional payloads include an EO/IR micro stabilized gimbal, kinetic munitions, or communications relay package.

Future capabilities include folding wings and collapsible tail allowing the UAS to fit in a 6" x 6" x 3" (16 cm x 16 cm x 8 cm) box. This compact design will be capable of being thrown into the air in its folded configuration, automatically unfold and transition to flight.

VESA can be deployed as a submunition and may be incorporated into existing and future Counter-UAS and Counter-Swarm systems. VESA also has integrated swarm capability.

KEYFEATURES

Ease of use // Mission Execution // Reliability // Volume // Flexibility



FLIGHTSPECIFICATIONS

Flight Specifications

Max Flight Time (hover) 20 minutes
 (up to 30+ with fixed-wing flight)
 Max Range (with Data Link) 2 miles, 3 km
 Max Range (w/o Data Link) 15 miles, 24 km
 Max Ground Speed 60 mph, 26.8 m/s

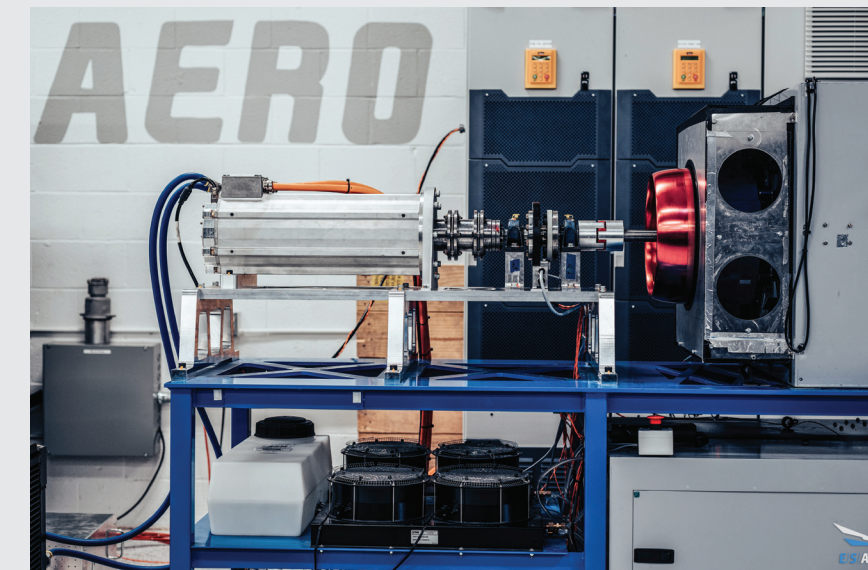
Vehicle Specifications

DoD Sizing Classification Group 1
 Maximum Gross Weight 5+ lbs, 2.2+ kgs
 Usable Payload 2+ lbs, 0.9+ kgs
 Dimensions (with props) 9.9 in x 13.8 in x 3 in
 25.2 cm x 35.2 cm x 7.6 cm
 Battery Type 18650 Li-ion Cells
 Battery Voltage 5S
 Battery Capacity 3.5 mAh
 Payload Options Stabilized EO/IR, Kinetic,
 Advanced Vision AI, Software Defined Radio

Ground Control Station Specifications

User Interface Android Tactical Assault Kit
 Modular Open System Architecture allows for multiple GCS options

EDS200 Dynamometer



ORIGINALLY DESIGNED FOR THE DEVELOPMENT OF THE X-57 MAXWELL, this dynamometer is uniquely capable of characterization of hybrid and electric drivetrains for aircraft certification. The EDS200 is a stand-alone system essential for Advanced Air Mobility development. The EDS200 system also regenerates power from the test article, significantly reducing the energy consumed during testing.

KEYFEATURES

**4-quadrant Regenerative Operation
 Liquid Cooled Brake Motor
 Integrated Calorimeter
 Custom Test Software
 Emergency Stop**

SPECIFICATIONS

Dimensions 32' x 16' x 7', 9.7m x 4.9m x 2.1m
 Temperature 20 channels,
 reported over CAN-bus
 Pressure Optional
 Air Flow Optional
 Absorber Type PMSM with active
 power regeneration
 Maximum Speed 5,000 RPM
 Power Capacity 7-268 hp, 5-200 kW
 Drive Maximum Torque Rating 396 lb.-ft, 500 Nm



< NASA X-57 MAXWELL

**THE EDS200 IS A STAND-ALONE SYSTEM ESSENTIAL FOR
 ADVANCED AIR MOBILITY DEVELOPMENT.**

