AUTONOMOUS AERIAL CARGO/UTILITY SYSTEM

AUTONOMOUS CARGO DELIVERY TO SUSTAIN SMALL DISTRIBUTED UNITS IN AUSTERE LOCATIONS AND DEMANDING ENVIRONMENTS.
The primary goal of the Autonomous Aerial Cargo/Utility System (AACUS) Innovative Naval Prototype (INP) program is the development of advanced autonomous capabilities to enable rapid cargo delivery by unmanned, and potentially optionally-manned, Vertical Take-Off and Landing (VTOL) systems. AACUS-enabled vehicles provide affordable and reliable rapid response cargo delivery to distributed small units in demanding, austere locations and environments. AACUS encompasses the development and implementation of VTOL-based obstacle detection and avoidance, as well as autonomous landings at unprepared, off-field, non-cooperative landing sites. It also provides dynamic contingency planning to the point of landing with goal-based supervisory control by any field personnel with no special training.

The AACUS system is built on Aurora’s Tactical Aerial Logistics System (TALOS) architecture, which is modular and utilizes open standards. The TALOS architecture enables porting of this autonomy capability to multiple rotary wing platforms with minimal non-recurring engineering effort. To date, AACUS technology has been flown on a Boeing AH-6 Unmanned Little Bird, multiple Bell 206 variants and Aurora’s UH-1 optionally piloted aircraft.

**Minimal Human Interface**

AACUS enables any Marine to supervise this capability from an intuitive, hand-held, field interface.

- Includes a goal-based supervisory control component that allows any field personnel to request and negotiate a desired landing site
- Allows communication with ground personnel for seamless and safe loading and unloading
- Android app can load onto any tablet and leverage existing man-portable data radios
Cognitive Autonomy

AACUS is a planning and mission system software package combined with a sensor suite designed to autonomously operate a full-scale rotary wing aircraft into and out of austere landing zones.

- AACUS-enabled cargo unmanned systems are able to plan missions and execute them with minimal human involvement
- AACUS determines safe landing areas and lands aircraft autonomously, avoiding obstacles

Platform Agnostic

AACUS is not a platform – it is an appliqué kit portable across multiple rotary wing aircraft

- Enables a new level of autonomy to manned and unmanned aircraft platforms
- Provides the option for a true autonomous sustainment capability across legacy or future Type/Model/Series rotary wing and UAS platforms
- Integrated and tested on three different aircraft types
- Open architecture approach enables rapid integration on new aircraft
- Mission computer and sensor units are self-contained. Minimal intrusion into aircraft systems means minimal integration costs.

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Aurora Flight Sciences is a leader in the development and manufacturing of advanced unmanned systems and aerospace vehicles.

We are headquartered in Manassas, Virginia and operate production plants in Bridgeport, West Virginia and Columbus, Mississippi. Aurora has Research and Development Centers in Cambridge, Massachusetts, Dayton, Ohio and Mountain View, California, and a European office, Aurora Swiss Aerospace, located in Lucerne, Switzerland.

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