

# Aurora Flight Sciences: Enabling the Future of Humans and Autonomy

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# Aurora's Approach to Autonomy

## MISSION

Put autonomy to work.

## DEFINITION

Perform tasks **for and with humans**, in domains that are sufficiently unstructured, uncertain, or complex to render automation (rote mechanization) insufficient.

## VISION

1. Autonomy-driven passenger-class air travel
2. A common system for unmanned cargo delivery
3. Enable extraordinary missions



## 2 Recent Example Programs

### ALIAS

- Non-invasive autonomous co-pilot with machine vision
- Flight tested in 5 airframes
- Ground tested in 737 sim
- Full implementation of Aurora Autonomy Core

### AACUS

- Autonomous Aerial Cargo Utility System (AACUS)
- Rotary wing mission system for autonomous tactical cargo delivery missions into and out of unprepared zones



# MARINES TESTING SELF-FLYING HELICOPTERS

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# Autonomy Challenges

- Increasingly autonomous systems focused around better understanding of humans and autonomy
  - Cognitive task analysis
  - Autonomy mode awareness
- Integrated perception and collision avoidance systems
- Applications of machine learning and data science
  - Knowledge acquisition
- Predictive autonomy
- New operating domains
  - Cargo delivery
  - Urban air mobility
- Mission enabled autonomy
  - Operation of exquisite assets with attritable assets
  - Navigation in GPS denied environments
- Cost effective autonomy
- Reliability
- Regulatory
  - Certification
  - Qualification
- Talent acquisition and talent retention

