



News Release

Defense Advanced Research Projects Agency

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IMMEDIATE RELEASE

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DARPA CHOOSES CONTRACTORS FOR VULTURE PROGRAM

The Defense Advanced Research Projects Agency (DARPA) has selected Aurora Flight Sciences, Boeing and Lockheed Martin as contractors for the first phase of the Vulture program. The Vulture contractors will design and develop an unmanned aerial system able to fly on station and perform its mission for five years without interruption.

The Vulture program envisions a system carrying a 1,000-pound payload drawing five kilowatts of power that is able to stay airborne for an uninterrupted period of at least five years while remaining in the required mission airspace 99 percent of the time.

During the program's first phase, a 12-month analytical effort, the three contractor teams will conduct trade studies to determine the design concept that best satisfies the operational tasks and optimizes design capability. They will also explore various vehicle configurations while concentrating on reliability and mission assurance design aspects. The phase will conclude with a concept design review of sub-scale and full-scale demonstration vehicles and the supporting technology development plan to reduce risk on key technologies.

Vulture will leverage space satellite operations and design paradigms, in which long life and extreme reliability are routine, and bring this concept to the realm of aircraft operations in order to provide a level of mission reliability previously unknown in aircraft operations. Vulture will provide pseudo-satellite benefits such as increased platform availability and consistent and persistent coverage, and allow smaller fleet sizes.

The Vulture program will focus on developing innovative technologies and approaches for in-flight energy collection or refueling and ultra-reliable systems or systems able to be repaired in-flight. Other new technologies that will be developed and that are key to the ability of the Vulture system to provide the desired mission reliability include multi-junction photovoltaic cells, high specific energy fuel cells, extremely efficient propulsion systems, in-flight precision autonomous materiel transfer and docking, extremely efficient vehicle structural design, mitigation of environmentally induced loads, and innovative vehicle control concepts. The Vulture program is not developing payloads, but is focused on development of the airborne system able to provide the objective mission reliability. A system able to remain on station for five years could have utility in a variety of missions such as communications relay, surveillance and reconnaissance, and signals intelligence.

In the program's second phase, DARPA contractors will refine the demonstrator designs, continue technology development and risk reduction efforts, and conduct an uninterrupted three-month flight test of a sub-scale demonstrator. The third and final phase of the program will

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consist of a flight test of the full-scale demonstrator vehicle, during which the Vulture system will demonstrate the ability to operate continuously for 12 months.

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