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AeroVironment Solar-Powered Puma AE Small Unmanned Aircraft Achieves Continuous Flight for More Than Nine Hours

- Groundbreaking development in the evolution of small unmanned aircraft systems; advanced solar cells increase hand-launched Puma AE™ endurance by 350 percent
- Far-reaching implications for small UAS utility in military, public safety and commercial uses
- Alta Devices cutting-edge mobile power technology produces ample power with minimal added weight

WASHINGTON--(BUSINESS WIRE)-- **At AUVSI** — [AeroVironment, Inc.](http://www.aerovironment.com) (NASDAQ:AVAV) today announced that a recent outdoor test flight of a solar-powered prototype version of the company's proven Puma AE™ small unmanned aircraft system (UAS), operating with the company's newest long-endurance battery, lasted 9 hours, 11 minutes — significantly longer than the flight endurance of small UAS being used in the field today.



AeroVironment is working with Alta Devices, a Sunnyvale, Calif. company that provides flexible, portable power that can be embedded into any other material, in the development of the solar Puma AE.

"This is a critical milestone with far-reaching implications for the many ways small UAS can benefit military, public safety and commercial customers," said Roy Minson, AeroVironment senior vice president and general manager, Unmanned Aircraft Systems (UAS). "The solar Puma AE is the latest example of AeroVironment's longstanding commitment to deliver important, innovative solutions that meet our customers' needs.

"Our integration of this cutting-edge technology dramatically increases Puma's current flight endurance using a clean, renewable power source," Minson added. "This development can give Puma AE customers significantly increased capabilities that approach those of the next class of UAS at a much lower acquisition and operating cost, and

AeroVironment's Puma AE unmanned aircraft system (UAS) (Photo: Business Wire)

with much greater operational flexibility." AeroVironment's new long endurance battery extends Puma AE's non-solar endurance to more than three hours. This means small UAS could be used for longer missions over greater distances than previously possible.

Minson added that past solar solutions for powering small UAS were either too heavy or did not produce enough power for long-range flight — or both. "However," he said, "the solar Puma AE technology can produce enough power, while adding negligible weight, so that endurance is no longer an issue for most customer missions."

Using a proprietary and highly differentiated technology, Alta Devices manufactures the world's thinnest and highest efficiency solar cells using Gallium Arsenide. This technology significantly extends the battery life of any application, in many cases eliminating the need to recharge from the grid because it converts more light into electricity. Solar material like that used in the development of the solar Puma AE incorporates a thin, mobile power technology on a flexible substrate that has been independently certified by the National Renewable Energy Laboratory (NREL) as world-records for both single (28.8%) and

dual (30.8%) junction solar cells.

Puma AE is a flexible, efficient and rugged hand-launched workhorse for intelligence, surveillance and reconnaissance (ISR). This solar-power enhancement makes it even more indispensable for U.S. and allied military, as well as for domestic public safety applications, such as firefighting, law enforcement, search and rescue, oil and gas field monitoring, and other commercial needs.

The solar Puma AE configuration currently is in the research and development phase. A production version is planned for early 2014.

The 13-pound Puma AE is fully waterproof, man-portable and can be assembled in minutes, hand-launched, operated and recovered on sea or land by a team of two people. It requires no infrastructure, such as runways, launching pads or recovery devices. In addition, the system is quiet and operates autonomously, providing persistent observation data.

Last month, AeroVironment received a "Restricted Category" rating for its Puma AE small UAS from the Federal Aviation Administration. The first-of-its-kind certificate permits operators to fly Puma AE for commercial missions in regions of the Arctic.

About AeroVironment's Family of Small UAS

[RQ-11B Raven®](#), [RQ-12 Wasp AE™](#), [RQ-20A Puma™](#) and [Shrike VTOL™](#) comprise AeroVironment's Family of Small Unmanned Aircraft Systems. Operating with a [common ground control system \(GCS\)](#), this Family of Systems provides increased capability to the warfighter that can give ground commanders the option of selecting the appropriate aircraft based on the type of mission to be performed. This increased capability has the potential to provide significant force protection and force multiplication benefits to small tactical units and security personnel. AeroVironment provides logistics services worldwide to ensure a consistently high level of operational readiness and provides mission services for customers requiring only the information its small UAS produce. AeroVironment has delivered thousands of new and replacement small unmanned air vehicles to customers within the United States and to more than twenty international governments.

The [Qube™ small UAS](#) tailored to search and rescue, first response, law enforcement and other public safety missions. Small enough to fit easily in the trunk of a car, the Qube system can be unpacked, assembled and ready for flight in less than five minutes, giving the operator a rapidly deployable eye in the sky at a fraction of the cost of manned aircraft and large unmanned aircraft.

About AeroVironment, Inc.

AeroVironment is a technology solutions provider that designs, develops, produces, operates and supports an advanced portfolio of [Unmanned Aircraft Systems](#) (UAS) and electric transportation solutions. Agencies of the U.S. Department of Defense and allied military services use the company's electric-powered, [hand-launched unmanned aircraft systems](#) extensively to provide situational awareness to tactical operating units through real-time, airborne reconnaissance, surveillance and communication. Multiple government agencies have helped to fund the development and demonstration of [Global Observer®](#), a hybrid-electric, stratospheric UAS designed to provide affordable, persistent reconnaissance and communication over any location on the globe. [Switchblade™](#) is a tactical missile system designed to provide a rapid, lethal, pinpoint precision strike capability with minimal collateral damage. AeroVironment's electric transportation solutions include a comprehensive suite of [electric vehicle \(EV\) charging systems, installation and data services](#) for consumers, automakers, utilities and government agencies, [power cycling and test systems](#) for EV developers and [industrial electric vehicle charging systems](#) for commercial fleets. More information about AeroVironment is available at www.avinc.com.

About Alta Devices

Alta Devices is (EM)POWERING THE UNPLUGGED WORLD™ by delivering the world's most efficient, thin and flexible mobile power technology. Converting light into electricity, Alta's technology extends the energy source of a system, and in many cases, completely cuts the traditional power cord. The solution can be completely integrated into the final system, and is ideal for use in unmanned systems, consumer electronics, automotive, remote exploration, or anywhere size, weight, and mobility matter. Alta Devices holds world records for energy conversion efficiency, and has received funding from, Kleiner Perkins Caufield & Byers, August Capital, Crosslink Capital, AIMCo, GE, Dow, and others. The company is headquartered in Sunnyvale, CA. For more information, visit <http://www.altadevices.com>.

Safe Harbor Statement

Certain statements in this press release may constitute "forward-looking statements" as that term is defined in the Private Securities Litigation Reform Act of 1995. These statements are made on the basis of current expectations, forecasts and assumptions that involve risks and uncertainties, including, but not limited to, economic, competitive, governmental and technological factors outside of our control, that may cause our business, strategy or actual results to differ materially from

those expressed or implied. Factors that could cause actual results to differ materially from the forward-looking statements include, but are not limited to, our ability to perform under existing contracts and obtain additional contracts; changes in the regulatory environment; the activities of competitors; failure of the markets in which we operate to grow; failure to expand into new markets; failure to develop new products or integrate new technology with current products; and general economic and business conditions in the United States and elsewhere in the world. For a further list and description of such risks and uncertainties, see the reports we file with the Securities and Exchange Commission. We do not intend, and undertake no obligation, to update any forward-looking statements, whether as a result of new information, future events or otherwise.

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