



AV Reveals Skyfall: Future Concept Next-Gen Mars Helicopters for Exploration and Human Landing Preparation

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ARLINGTON, Va., July 24, 2025 /PRNewswire/ -- Today, AeroVironment, Inc. ("AV") (NASDAQ: AVAV), a global leader in intelligent, multi-domain autonomous systems, revealed Skyfall—a potential future mission concept for next-generation Mars Helicopters developed with NASA's Jet Propulsion Laboratory (JPL) to help pave the way for human landing on Mars through autonomous aerial exploration. The concept is heavily focused on rapidly delivering an affordable, technically mature solution for expanded Mars exploration that would be ready for launch by 2028.

Skyfall is designed to deploy six scout helicopters on Mars, where they would explore many of the sites selected by NASA and industry as top candidate landing sites for America's first Martian astronauts. While exploring the region, each helicopter can operate independently, beaming high-resolution surface imaging and sub-surface radar data back to Earth for analysis, helping ensure crewed vehicles make safe landings at areas with maximum amounts of water, ice, and other resources. The data Skyfall collects could also advance the nation's quest to discover whether Mars was ever habitable.

The concept would be the first to use the "Skyfall Maneuver"—an innovative entry, descent and landing technique whereby the six rotorcraft deploy from their entry capsule during its descent through the Martian atmosphere. By flying the helicopters down to the Mars surface under their own power, Skyfall would eliminate the necessity for a landing platform—traditionally one of the most expensive, complex and risky elements of any Mars mission.

This new Mars Helicopter concept leverages AV and JPL's prior success as co-developers of the Ingenuity Mars Helicopter program, which was executed on time and on budget and completed 72 historic flights at Mars' Jezero Crater in just under three years—outperforming flight targets by more than 14 times and longevity targets by more than 32 times expectations. True to its name, Ingenuity showcased American innovation and space superiority by achieving the first powered flight on another world, introducing the speed and data collection capability that aerial operations bring to the Red Planet.

"Skyfall offers a revolutionary new approach to Mars exploration that is faster and more affordable than anything that's come before it," said William Pomerantz, Head of Space Ventures at AV. "Thanks to a true partnership between industry and government, we're expanding the unprecedented success of Ingenuity. With six helicopters, Skyfall offers a low-cost solution that multiplies the range we would cover, the data we would collect, and the scientific research we would conduct—making humanity's first footprints on Mars meaningfully closer."

Skyfall builds upon AV's expertise in multi-domain autonomous systems and proven capabilities as part of the Ingenuity program, including its lightweight aircraft structure suitable for the thin atmosphere of Mars. As part of the public-private partnership, JPL plans to transfer some components of its Ingenuity work to AV for the new mission, commercializing many of the proven avionics, flight software, and modeling techniques that have worked on Mars.

"Ingenuity established the United States as the first and only country to achieve powered flight on another planet. Skyfall builds on that promise, providing detailed, actionable data from an aerial perspective that will not only be of use planning for future crewed missions, but can also benefit the planetary science community in their search for evidence that life once existed on Mars," said Trace Stevenson, President of Autonomous Systems at AV. "From ground to air to sea and now to space, our fleet of uncrewed systems is unleashing American drone dominance across all domains and inspiring the next generation of American scientists, engineers, and explorers to ensure that dominance persists for generations to come."

Both Ingenuity and the Skyfall concept are part of the broader AV_Space portfolio, which spans ISR (Intelligence, Surveillance, and Reconnaissance), space technologies and payloads, and space operations. AV is a leader in long-haul laser communication, offering resilient space-based communication terminals that are faster, more secure, and consume less power than traditional systems. AV's advanced surveillance, data collection, and rapid analysis capabilities enhance customer situational awareness across various domains and ensure our nation's space superiority. With its BADGER and WASP ground-based phased array antennas, AV is modernizing and simplifying mission operations while rapidly expanding satellite command and control capabilities for complex SATCOM, telemetry, and electronic warfare missions.

With NASA's goal of launching inspiring missions to Mars during favorable launch windows as the planets align, AV has already begun internal investments and coordination with NASA JPL to facilitate a potential 2028 launch.

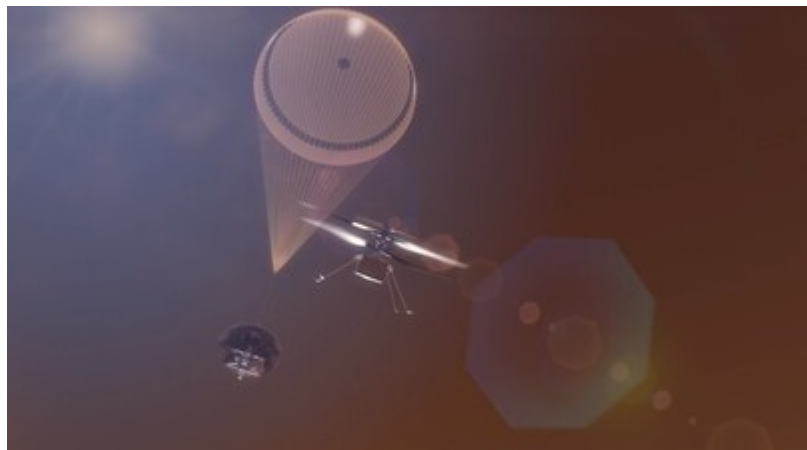
About AV

AV (NASDAQ: AVAV) is a defense technology leader delivering integrated capabilities across air, land, sea, space, and cyber. The Company develops and deploys autonomous systems, loitering munitions, counter-UAS technologies, space-based platforms, directed energy systems, and cyber and electronic warfare capabilities—built to meet the mission needs of today's warfighter and tomorrow's conflicts. With a national manufacturing footprint and a deep innovation pipeline, AV delivers proven systems and future-defining capabilities at speed, scale, and operational relevance. For more information, visit www.avinc.com.

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