# Lockheed Martin Team Opens New Space Exploration Development Laboratory For Orion And Constellation

Lockheed Martin announced today the opening of its new space Exploration Development Laboratory in a ceremony dedicating the facility to support the National Aeronautics and Space Administration's (NASA) Project Orion and Constellation Program. Orion is America's next-generation human spaceflight vehicle that will transport up to six astronauts to and from the International Space Station and up to four to the moon and destinations beyond, beginning in 2015 after the space shuttle is retired.

The new 10,000 sq. ft. Exploration Development Laboratory is a state-of- the-art test facility funded by Lockheed Martin and its teammates United Space Alliance and Honeywell as part of an integrated EDL network that includes facilities in Denver, CO, Glendale, AZ and Arlington, VA. The EDL network is designed to reduce cost and schedule risk by providing an early opportunity to perform systems level avionics and software testing for Orion in a realistic environment in the development phase of the program.

"The Exploration Development Lab provides a tremendous benefit to NASA and the Lockheed Martin team as we begin a very robust test program for Orion," said Cleon Lacefield, vice president and program manager of Project Orion for Lockheed Martin Space Systems. "We are very excited to have the EDL ready and operational for Orion and Constellation so early in the development phase of the program. Testing in this new facility has already begun and we successfully completed the first Pad Abort 1 avionics systems test for Orion last week."

The EDL in Houston is located adjacent to NASA Johnson Space Center, enabling the Lockheed Martin team to work closely with NASA's Project Orion and Constellation Program early in the development and testing phase to gain clarity on requirements. This location allows the team to take full advantage of the breadth of human space flight experience in Houston, including early involvement and collaboration with astronaut flight crew members and flight controllers.

Initial testing of critical systems will be done in the EDL, including the Guidance, Navigation, and Control (GN&C), Automated Rendezvous and Docking (AR&D), crew interfaces, and software development processes. Avionics system testing will be performed to reduce risk prior to abort flight testing at White Sands Missile Range and NASA Kennedy Space Center. EDL testing also will include system integration tests and mission tests that employ the team's "test like you fly" philosophy. The Lockheed Martin team also is working closely with NASA on a Human Engineering mockup that will be used to perform fact finding activities, such as reach zone, panel displays, internal lighting assessment, seat mockup and development, docking hatch development, crew stowage, hand controller development, and other human interface devices.

Following EDL testing, the next phase of tests will be done at NASA's CEV Avionics Integration Laboratory (CAIL). Verification of requirements in the EDL ensures that certification in the CAIL will be successful, greatly reducing software development risk.

Lockheed Martin Space Systems Company, a major operating unit of Lockheed Martin Corporation, designs, develops, tests, manufactures and operates a full spectrum of advanced-technology systems for national security, civil and commercial customers. Chief products include human space flight systems; a full range of remote sensing, navigation, meteorological and communications satellites and instruments; space observatories and interplanetary spacecraft; laser radar; fleet ballistic missiles; and missile defense systems.

Headquartered in Bethesda, Md., Lockheed Martin employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2006 sales of $39.6 billion.

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