

Lockheed Martin Team Avionics And Ground Systems Soar On NASA's Ares I-X Successful Flight Test

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Lockheed Martin's avionics and ground system were fundamental to last week's picture perfect flight test of NASA's Ares I-X launch vehicle from Kennedy Space Center, FL.

The primary test objective for the Ares I-X flight was to demonstrate command and control of this new vehicle design as well as effective vehicle integration, ground processing and launch operations that will be used for NASA's Ares I launch system. The flight test also demonstrated vehicle proof of concept and collected data on important flight performance in an actual launch environment that reduce risk early in the design of the Ares I program. Ares I will provide NASA with an even safer, more reliable and more affordable launch capability once the space shuttle is retired, that will take astronauts to the International Space Station and missions to the moon, Mars and other destinations in the solar system.

"What a tremendous accomplishment this flight test of the Ares I-X represents for NASA, the Constellation Program, America's space program and the entire team here at Lockheed Martin," said John Karas, vice president and general manager of Human Space Flight for Lockheed Martin. "The data indicate that our avionics and ground system performed outstanding throughout the launch and flight profile. NASA is well on its way to having Ares I ready to support Orion missions to the space station and human space exploration missions to a variety of destinations beyond low Earth orbit," added Karas.

Lockheed Martin, with the support of its subcontractors, United Launch Alliance, Honeywell and United Space Alliance, developed the avionics and ground system for Ares I-X, providing all the command and control capability on the vehicle and its integration with Launch Complex 39B. The integrated systems also provided NASA with the ability to streamline launch operations and fly this new rocket from concept to launch in just over three years.

The Ares I-X avionics utilizes a fully integrated system of ground, airborne and software components. At the heart of the ground system is a modified version of the Atlas Ground Command, Communication and Control designed for Ares I-X. The modified system was developed and fabricated at Lockheed Martin Space Systems at its facilities near Denver, CO, and validated in the company's System Integration Lab prior to integration in the Ares I-X Mobile Launch Platform.

"When we powered on the vehicle at the launch site for the first time, everything looked exactly as we had simulated in the lab. It was great," said Paul Sannes, Ares I-X avionics and ground system program manager for Lockheed Martin Space Systems. "It was another straightforward step in the process and an example of how well our avionics and ground systems can be used to streamline operations, improve our launch efficiencies and meet our launch schedules. Throughout the flight test, we were right on the money for each of the mark events: ignition command; separation from the launch pad, roll control, algorithms for proper trajectory; separation commands. It was textbook perfect. At the end of the flight, there were a lot of cheers coming from the control center. We're very proud to be a part of this extraordinary NASA team," added Sannes.

Lockheed Martin was selected to provide Avionics Integrator Services for the Ares I-X Development Flight Test under contract to Jacobs Technology's Engineering, Science, and Technical Services Group for NASA Marshall Space Flight Center. As the prime contractor to NASA for the Orion Project, Lockheed Martin also is responsible for designing and building a state-of-the-art crew transportation spacecraft that will provide more flexible space exploration and multi-mission capability than any previous human space flight vehicle ever developed. The Orion spacecraft will be the flagship of the Constellation Program's plan to return humans to the moon and prepare for future voyages to other destinations in our solar system.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that 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 2008 sales of \$42.7 billion.

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