Lockheed Martin Global Positioning System Updates Enhance System Accuracy 10-15 Percent

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Lockheed Martin has upgraded the software processing and modeling for the Air Force's Global Positioning System (GPS), enhancing the Air Force's ability to monitor GPS satellites and improve system accuracy 10-15 percent for users worldwide.

The recently completed update, named the Legacy Accuracy Improvement Initiative (L-AII), doubles the amount of navigation data collected and provided to Air Force operators.

The L-AII upgrade allows the integration of data from up to 14 National Geospatial Intelligence Agency (NGA) monitor stations with data from six existing GPS monitor stations. The L-AII update has incorporated improvements in a variety of scientific knowledge areas, including: numerical standards, geopotential, monitor station site displacement, tidal variations in the earth's rotation, tropospheric delays, and satellite solar radiation pressure.

"With greater global coverage from the additional NGA monitor stations, operators will be able to monitor the GPS constellation in near real-time, allowing faster response to anomalies," said John Mengucci, Lockheed Martin Vice President and General Manager of DoD Systems. "The 10 to 15 percent accuracy improvement will be advantageous to all GPS users and will not require any modifications to their GPS receivers. This program is truly a win-win for both the operators and the users."

Lockheed Martin is also the prime contractor for the GPS IIR program and is under contract to modernize eight GPS IIR satellites which will provide significantly improved navigation performance for U.S. military and civilian users worldwide. The first modernized GPS IIR satellite was launched successfully on Sept. 25 from Cape Canaveral Air Force Station and was operational on Dec. 16, 2005.

GPS provides precise, continuous, all-weather, three dimensional position, velocity, and timing information to properly equipped air, land, sea and space-based users. The GPS Operational Control System (OCS) monitors, maintains and commands the GPS satellite constellation. The OCS operations are performed via the Master Control Station (MCS), and dedicated monitor stations and ground antennas.

The MCS, located at Schriever Air Force Base in Colorado, is operated and maintained 24 hours a day, seven days a week, and serves as the mission control center for GPS operations. Ground antennas and monitor stations permit global constellation coverage and are located around the world.

Headquartered in Bethesda, Md., Lockheed Martin employs about 135,000 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 2005 sales of $37.2 billion.

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