Lockheed Martin GPS III Satellite Prototype Proves It Can Successfully Communicate With GPS Satellite Constellation

GPS III Backward-Compatible with GPS IIR, IIR-M, and IIF Satellites Currently in Orbit

CAPE CANAVERAL AIR FORCE STATION, Fla., Nov. 21, 2013 /PRNewswire/ -- The Lockheed Martin [NYSE: LMT] prototype of the next-generation Global Positioning System (GPS) satellite, the GPS III, recently proved it was backward-compatible with the existing GPS satellite constellation in orbit.

Lockheed Martin's GPS III Non-Flight Satellite Testbed (GNST), a full-sized, functional GPS III satellite prototype, communicated via cross-links with Air Force flight-like hardware simulators for the GPS IIR, GPS IIR-M, and GPS IIF satellites.

During tests that concluded on Oct. 17, Lockheed Martin's GPS III Nonflight Satellite Testbed (GNST), a full-sized, functional satellite prototype currently residing at Cape Canaveral Air Force Station, successfully communicated via cross-links with Air Force flight-like hardware simulators for the GPS IIR, GPS IIR-M, and GPS IIF satellites, which make up the bulk of the current GPS satellite constellation. Testing also demonstrated the ability of an Air Force receiver to track navigation signals transmitted by the GNST.

"These tests represent the first time when the GNST's flight-like hardware has communicated with flight-like hardware from the rest of the GPS constellation and with a navigation receiver," explained Paul Miller, Lockheed Martin's director for GPS III Development. "This provides early confidence in the GPS III's design to bring advanced capabilities to our nation, while also being backward-compatible."

Lockheed Martin is currently under contract to produce the first four GPS III satellites (SV 01-04), and has received advanced procurement funding for long-lead components for the fifth, sixth, seventh, and eighth satellites (SV 05-08). The first flight-ready GPS III satellite is expected to arrive atCape Canaveral in 2014, for launch by the Air Force in 2015.

GPS III, a critically important program for the Air Force, will affordably replace aging GPS satellites in orbit while improving capability to meet the evolving demands of military, commercial and civilian users. GPS III satellites will deliver three times better accuracy; provide up to eight times more powerful anti-jamming capabilities; and include enhancements to extend spacecraft life 25 percent further than the prior GPS block. It will be the first GPS satellite with a new L1C civil signal designed to make it interoperable with other international global navigation satellite systems.

An innovative investment by the Air Force under the original GPS III development contract, the GNST has helped to identify and resolve development issues prior to integration and test of the first GPS III flight space vehicle (SV 01). Following the Air Force's rigorous "Back-to-Basics" acquisition approach, the GNST has gone through the development, test, and production process for the GPS III program first, significantly reducing risk for the flight vehicles, improving production predictability, increasing mission assurance, and lowering overall program costs.

The GNST arrived at the Cape onJuly 19 to test facilities and pre-launch processes in advance of the arrival of the first flight satellite. On Aug. 30, the GNST successfully established remote connectivity and communicated with the GPS Next Generation Operational Control System (OCX), being developed by Raytheon.

Prior to shipment to the Cape, the GNST completed a series ofhigh-fidelity activities to pathfind the integration, test and environmental checkout that all production GPS III satellites undergo at Lockheed Martin's GPS III Processing Facility (GPF) in Denver, Colo.

The GPS III team is led by the Global Positioning Systems Directorate at the U.S. Air Force Space and Missile Systems Center. Lockheed Martin is the GPS III prime contractor, with teammates including ITT Exelis, General Dynamics, Infinity Systems Engineering, Honeywell, ATK, and other subcontractors. Air Force Space Command's 2nd Space Operations Squadron, based at Schriever Air Force Base, Colo., manages and operates the GPS constellation for both civil and military users.

Headquartered in Bethesda, Md., Lockheed Martin is a global security and aerospace company that employs about 116,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration, and sustainment of advanced technology systems, products, and services. The Corporation's net sales for 2012 were $47.2 billion.

Note to Editors:
GPS III video and high-resolution images are available for download at www.lockheedmartin.com/gps

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