U.S. Air Force's First GPS III Satellite Receives Commands From Next-Generation OCX Ground Control Segment

GPS III and OCX Successfully Complete Factory Mission Readiness Test

DENVER, Dec. 13, 2017 /PRNewswire/ -- The first advanced GPS III satellite successfully established remote connectivity and communicated with the Next Generation Operational Control System (OCX), further validating the U.S. Air Force's modernized Global Positioning System (GPS) is ready to launch its first satellite.



GPS III Space Vehicle 01 (GPS III SV01) at Lockheed Martin's GPS III Processing Facility.

On November 2, 2017, GPS III Space Vehicle 01 (GPS III SV01), the first of 10 GPS III satellites designed by Lockheed Martin (NYSE: LMT), and OCX, being developed by Raytheon Corporation (NYSE: RTN), successfully completed Factory Mission Readiness Testing (FMRT).

The FMRT validated the command and control interaction between GPS III and the OCX's Launch and Checkout System (LCS) through a simulated full launch and early orbit mission event sequence.

During this end-to-end system demonstration, command signals were sent from the latest OCX LCS software installed at Lockheed Martin's Launch and Check Out Capability node in Denver to Schriever Air Force Base in Colorado Springs, Colorado. From there, the commands were uplinked back to the GPS III SV01 satellite, currently awaiting a call up for launch at Lockheed Martin.

"During FMRT, GPS III SV01 received and successfully processed OCX commands that are routinely sent during launch, transfer orbit maneuvers, deployments and payload initialization," said Mark Stewart, Lockheed Martin's vice president for Navigation Systems. "We thoroughly tested the first GPS III satellite just like we are going to fly it in 2018."

GPS III SV01 and OCX first "talked" to each other during a link check on October 3, 2017.

"This was the first time the launch and checkout system directly interfaced with the GPS III satellite," said Bill Sullivan, vice president of Raytheon's GPS OCX program. "We're making consistent, steady progress, and that's driving us toward a successful launch next year."

The demo further verifies the space-to-ground compatibility between GPS III satellites and OCX. During a 2013 Compatibility & Integration test, Lockheed Martin's GPS III Nonflight Satellite Testbed (GNST) – a full-sized, functional satellite prototype – also connected with and received commands from an earlier version of Raytheon's OCX LCS software.

On September 22, 2017, the Air Force declared GPS III SV01 "Available for Launch," with launch expected in 2018. The successful FMRT was the final validation that GPS III SV01 is ready to be shipped to the launch pad.

GPS III will have three times better accuracy and up to eight times improved anti-jamming capabilities. Spacecraft life will extend to 15 years, 25 percent longer than the newest GPS satellites on-orbit today. GPS III's new L1C civil signal also will make it the first GPS satellite to be interoperable with other international global navigation satellite systems, like Galileo.

OCX will revolutionize GPS command and control and mission management capabilities. It will control all legacy and new signals, provide protection against evolving cyber threats, and reduce operation and sustainment costs through efficient software architecture, automation and performance-based logistics. OCX represents a quantum leap in capabilities over the current system, providing flexibility and adaptability to meet future GPS mission needs.

The GPS III and OCX teams are led by the Global Positioning Systems Directorate at the U.S. Air Force Space and Missile Systems Center. Air Force Space Command's 2nd Space Operations Squadron (2SOPS), based at Schriever Air Force Base, Colorado, manages and operates the GPS constellation for both civil and military users.

For additional GPS III information, photos and video visit:www.lockheedmartin.com/gps.

For more OCX information visit: www.raytheon.com/capabilities/products/gps_ocx/

About Lockheed Martin
Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 97,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

About Raytheon
Raytheon Company, with 2016 sales of $24 billion and 63,000 employees, is a technology and innovation leader specializing in defense, civil government and cybersecurity solutions. With a history of innovation spanning 95 years, Raytheon provides state-of-the-art electronics, mission systems integration, C5I™ products and services, sensing, effects, and mission support for customers in more than 80 countries. Raytheon is headquartered in Waltham, Massachusetts. Follow us on Twitter.

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