Second Lockheed Martin-Built Next Generation GPS III Satellite Responding To Commands, Under Self-Propulsion

First GPS III Satellite Successfully Completes On-Orbit Testing

DENVER, Aug. 22, 2019 /PRNewswire/ -- The U.S. Air Force's second next-generation GPS III satellite, built by Lockheed Martin (NYSE: LMT), is responding to commands, under control and now using its own internal propulsion system to get to orbit following its successful launch this morning.

At about 11:01 a.m. ET, Air Force and Lockheed Martin engineers at Lockheed Martin's Launch & Checkout Facility near Denver declared they had full control of GPS III Space Vehicle 02 (GPS III SV02) shortly after the satellite's separation from its United Launch Alliance (ULA) Delta IV rocket booster. The satellite, nicknamed "Magellan" by the Air Force, began its rocket ride to space with a 9:06 a.m. ET launch from Cape Canaveral Air Force Station.

GPS III SV02 is now climbing towards its operational orbit about 12,550 miles above the earth under the power of its own Liquid Apogee engines. Engineers at Lockheed Martin Space's Waterton, Colorado facility are commanding the satellite using elements of the GPS Next Generation Operational Control System (OCX) Block 0.

"GPS III SV02 is receiving and responding to commands just as planned. In the days ahead, we'll finish orbit raising to our operational slot and then send the satellite commands telling it to deploy its solar arrays and antennas," said Johnathon Caldwell, Lockheed Martin Space's Vice President for Navigation Systems. "Once we are set up, we'll begin on-orbit checkout and tests, including extensive signals testing with our advanced navigation payload."

GPS III SV02 is the second GPS III satellite designed and built by Lockheed Martin to help the Air Force modernize today's Global Positioning System (GPS) constellation with new technology and capabilities. GPS III satellites provide 3x greater accuracy and up to 8x improved anti-jamming capabilities. GPS III also provides a new L1C civil signal, compatible with other international global navigation satellite systems, like Europe's Galileo.

The First GPS III Satellite Completes On Orbit Testing
GPS III SV02 will be the second GPS III satellite in orbit and the second GPS III satellite now being commanded from Lockheed Martin Space's facility.

On December 23, 2018, the Air Force launched the first GPS III satellite. Nicknamed "Vespucci," GPS III SV01 underwent months of checkout and thorough testing of its advanced, new navigation payload provided by Harris Corporation.

"GPS III SV01's performance exceeded expectations during testing," Caldwell said. "On July 12, we officially completed all On Orbit Check Out & Test activities. We are excited to see this satellite move to the next phase and perform in an operational environment."

That's expected to happen later this year once the first satellite is handed over to the Air Force.

Thinking Ahead From the Ground Up
In preparation for this handover, in 2016, the Air Force awarded Lockheed Martin the GPS III Contingency Operations (COps) contract to upgrade its current GPS ground control system – the Operational Control Segment (OCS) – to be able to "fly" today's 31-satellite constellation, as well as the new, more-powerful GPS III satellites, until OCX Block 1, still in development, is delivered.

Lockheed Martin delivered the GPS III COps software upgrade in May and it is currently undergoing preparations for installation.

COps is the latest GPS ground control upgrade project Lockheed Martin has had since it began sustaining the OCS in 2013. In November 2018, the company completed the AEP 7.5 upgrade -- the largest architectural change in the system's history -- replacing significant code, hardware and software to improve the system's cybersecurity capabilities and positioning the Air Force to better operate in contested, degraded and operationally limited environments.

In December 2018, the Air Force awarded Lockheed Martin the GPS Control Segment Sustainment II (GCS

II) contract to continue to further modernize and sustain the OCS through 2025.

In 2020, the OCS is expected to receive the M-Code Early Use (MCEU) upgrade, which will allow control of M-Code, an advanced, new signal designed to improve anti-jamming and anti-spoofing, as well as to increase secure access to military GPS signals for U.S. and allied armed forces.

With GPS III SV01 and SV02 now on orbit, GPS III satellites continue to roll off the production line at Lockheed Martin's advanced $128-million GPS III Processing Facility near Denver. On May 27, the Air Force declared the GPS III SV03 "Available for Launch" (AFL) and had the company place it into storage waiting for a launch date. GPS III SV04-08 are now in various stages of assembly and test.

In all, Lockheed Martin is under contract to build up to 32 next-generation GPS III/IIIF satellites for the Air Force. Additional "IIIF" capabilities will begin being added at the 11th satellite. These will include a fully digital navigation payload, a Regional Military Protection capability, an accuracy-enhancing laser retroreflector array, and a Search & Rescue payload.

Lockheed Martin is proud to be a part of the Air Force's GPS III team. The GPS III team is led by the Production Corps, Mid-Earth Orbit Division, 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.

About Lockheed Martin
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