

Lockheed Martin completes functional testing of first GPS III satellite bus electronic systems

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A Lockheed Martin-led industry team has completed successful functional integration tests of the spacecraft bus and network communications equipment on the first satellite of the next generation Global Positioning System, known as [GPS III](#).

The recent testing of GPS III space vehicle 1 (SV 1) bus – the portion of the space vehicle that carries mission payloads and hosts them in orbit – assured that all bus subsystems are functioning normally and ready for final integration with the satellite's navigation [payload](#). Systems tested included: guidance, navigation and control; command & data handling; on-board computer and flight software; environmental controls; and electrical power regulation. The SV 1 satellite's network communication equipment subsystem that interfaces with the ground control segment and distributes data throughout the [space vehicle](#) also passed all tests as expected.

This milestone follows February's successful [initial power-on of SV 1](#), which demonstrated the electrical-mechanical integration, validated the satellite's interfaces and led the way for functional and hardware-software integration testing.

"The successful completion of the SV 1 bus functional check out validates that the spacecraft is now ready to begin the next sequence of payload integration and environmental testing, prior to delivery," explained Keoki Jackson, vice president of [Lockheed Martin's](#) Navigation Systems mission area.

GPS III SV 1's navigation payload, which is being produced by ITT Exelis, will be delivered to Lockheed Martin's GPS Processing Facility (GPF) near Denver later in 2013. The hosted nuclear detection system payload has already been delivered and mechanically integrated. The satellite remains on schedule for flight-ready delivery to the U.S. Air Force in 2014.

GPS III is a critically important program for the Air Force, affordably replacing 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 and – to

outpace growing global threats that could disrupt GPS service – up to eight times improved anti-jamming signal power for additional resiliency. The GPS III will also include enhancements adding to the spacecraft's design life and a new civil signal designed to be interoperable with international global navigation satellite systems.

Lockheed Martin is currently under contract for production of the first four GPS III satellites (SV 1-4), and has received advanced procurement funding for long-lead components for the fifth, sixth, seventh and eighth satellites (SV 5-8).

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 ITT Exelis, General Dynamics, Infinity Systems Engineering, Honeywell, ATK and other subcontractors. Air Force Space Command's 2nd Space Operations Squadron (2SOPS), based at Schriever Air Force Base, Colo., manages and operates the GPS constellation for both civil and military users.

More information: [GPS III Product Page](#)

Provided by Lockheed Martin

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