

Nasa begins development of Space Launch System flight software

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(Phys.org) -- NASA engineers working on the new Space Launch System (SLS) can now begin developing the advanced, heavy-lift launch vehicle's flight software using newly delivered software test bed computers from Boeing.

The SLS will launch NASA's [Orion spacecraft](#) and provide an entirely new capability for human exploration beyond Earth's orbit. Designed to be flexible for crew or cargo missions, SLS and Orion will be safe, affordable, sustainable and continue America's journey of discovery from the unique vantage point of space.

"We are moving out very quickly on SLS," said Todd May, Space [Launch System](#) Program manager at NASA's Marshall Space Flight Center in Huntsville, Ala. "SLS will be the most powerful launch vehicle ever built, and it requires the most capable flight software in the history of [human spaceflight](#). Having this avionics hardware in place early will allow the NASA SLS team and Boeing to accelerate the flight software development."

The Boeing test bed computers make it possible for NASA to begin fine-tuning the launch vehicle's software. The flight software then will be installed in the Software Integration Test Facility at Marshall and tested with other electrical hardware and software. In this facility, the SLS team can run a variety of simulations to evaluate how the vehicle will perform in space.

The final SLS flight computer that will run the flight software will have the highest processing capability available in a flight avionics computer. It is being developed by upgrading existing systems used in [Global Positioning System](#) and communication satellites.

The first test flight of the SLS is scheduled for 2017, for which the launch vehicle will be configured for a 70-metric ton lift capacity. An evolved, two-stage [launch vehicle](#) configuration will provide a lift capability of 130 metric tons to enable missions beyond Earth's orbit and support deep space exploration.

The SLS software test bed computers were developed by The Boeing Company and delivered to Marshall ahead of schedule. Availability of this test bed platform early in the engineering development phase allows more time for NASA programmers to develop the most capable flight software in the history of spaceflight.

Provided by JPL/NASA

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