

Space Launch System Exploration Upper Stage Passes Critical Design Review

Successful independent review advances more powerful Block 1B rocket to next phase in development and transition to hardware build

HUNTSVILLE, Ala., Dec. 21, 2020 – Boeing [NYSE: BA] and NASA have successfully completed a critical design review for NASA's Space Launch System (SLS) Exploration Upper Stage (EUS), confirming the EUS design for continued development and transition to hardware build. Boeing has already started fabrication activities that will support building the first EUS at NASA's Michoud Assembly Facility in New Orleans.

The SLS rocket uses staged propulsion to send NASA's Orion spacecraft and astronauts, plus supplies, to the moon and beyond. The Boeing-built core stage powers the SLS in early flight, eventually separating when the upper stage takes over and provides the power to send crewed vehicles, space habitats and other payloads on to the moon or other deep space destinations.

To accomplish NASA's Artemis I lunar mission, the Block 1 variant of SLS will use a Boeing/United Launch Alliance Interim Cryogenic Propulsion Stage with one RL-10 engine to take an uncrewed Orion spacecraft on a test flight to the moon. SLS Block 1 rockets will be used for two subsequent crewed flights, including the first human mission to lunar orbit since the Apollo program.

The next version of SLS, Block 1B, will use EUS, which has larger fuel tanks and four RL-10 engines to give it a performance boost. That will allow SLS Block 1B to carry an Orion with a crew of four, as well as more than 10 metric tons of co-manifested payload.

"NASA's SLS Block 1B with the EUS is capable of sending astronauts and essential supporting cargo to the moon and beyond," said Steve Snell, EUS program manager for Boeing. "EUS was designed for crewed flights from the beginning, and the additional lift capability that comes with the EUS requires fewer flights to enable a sustained human presence in deep space sooner and more safely.

"The moon is 238,000 miles from Earth, and Mars at its closest has been 35 million miles away," Snell added. "Transporting crews in the fewest flights, for shorter durations, is the safest approach to human deep-space travel. Only the EUS-powered SLS can carry the Orion, along with the necessary mission cargo, in one launch to the moon – or beyond."

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