

SLS PDR

PRELIMINARY DESIGN REVIEW

EVOLUTIONARY ARCHITECTURE

WHERE WE ARE

- Performing research and development and risk reduction work for SLS evolved configuration.
- Evaluating options for evolving to full 130 metric ton capability.
- Utilizing in-house research and partnerships with industry and academia to contribute to making SLS a state-of-the-art launch vehicle.
- Building relationships with mission developers to explore future collaboration potential.

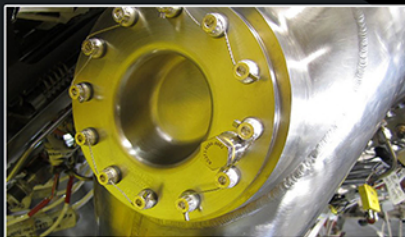
MAJOR ACCOMPLISHMENTS

Evolutionary Development



- Awarded 4 contracts for risk reduction on liquid and solid Advanced Booster concepts.
- Supported hot-fire tests of an F-1 gas generator as part of Dynetics and Pratt & Whitney Rocketdyne's Advanced Booster work.
- Met with industry and SLS partners to discuss evolution options to provide greater mission capture with fewer developments.

In-house Research Tasks



- Validated additive manufacturing of engine components via inclusion of an exhaust port cover produced by selective laser melting on a J-2X hot-fire test. The technique could reduce component manufacturing time from months to days.
- Conducted pyroshock testing of composite materials to improve modeling of how lighter structures would withstand separation loads.
- Began identifying commercially available primers for cryogenic application that would be compatible with new federal regulations.

Payload Partnerships



- Conducted a series of technical interchange meetings with Jet Propulsion Lab representatives to discuss cooperation for outer solar system exploration.
- Met with officials at Goddard Space Flight Center to discuss possible collaboration on the launch of potential space science missions.
- Participated in Humans2Mars conference panel on capabilities of SLS to support human missions to Mars.

Space Launch System