

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Upper Stages, Space Transfer, Entry and Landing Systems (3)

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SPACE LAUNCH SYSTEM EVOLVABILITY ASSESSMENT: UPPER STAGE DEFINITION

Abstract

This paper will focus on the evaluation of upper stages for the Space Launch System, heavy lift launch vehicle. An outline of the trade space definition process will be provided along with options for stage development which are prioritized as a function of mission capture and 1st order programmatics (affordability, sustainability and safety). Stage size and engine selection (existing and new) will be considered and risks and opportunities to the various options will also be considered. An evaluation of engagement of existing engine and stages will be provided with an intent on leveraging commonality and partnership potential. Sizing impacts to fit within the footprint of current and planned infrastructures will also be considered. In closing a summary of the proposed SLS Upper Stage definition will be given.