

NASA Advisory Council Recommendation

Feasibility of Developing Space Launch System (SLS) by 2016 2011-02-02 (EC-01)

Recommendation:

NASA should engage a competent integration contractor immediately in order to define induced environments (loads, vibro-acoustics, and thermal) and propulsion system parameters (propellant flow rates, engine pressure requirements, and required ullage pressures) the envelope design conditions for all 3 Blocks. These enveloped design conditions can then be used to size hardware that can be common to all 3 Blocks.

Major Reasons for the Recommendation:

This approach will minimize expensive redesign and retest requirements as SLS progresses from Block 1, to Block 2, and Block 3.

Consequences of No Action on the Recommendation:

If this recommendation is not followed, there will be deficiency in timely definition of design data for SLS and Multi-Purpose Crew Vehicle (MPCV), resulting in increased change traffic and increased cost and schedule. Furthermore, if the enveloping of induced environments of all 3 Blocks is not accomplished very early in the design phase of Block 1, unnecessary and costly design changes and associated testing will be required as NASA transitions to Block 2 and 3.

NASA Response:

NASA concurs that early integration is necessary for technical, programmatic, and affordability reasons. While NASA has chosen the Orion Block 2 design for the MPCV, the SLS design is still under consideration. In all cases, the rigorous and necessary integration activities will be addressed in the most efficient manner. Upcoming acquisition strategy decisions and further program formulation definition will assume rigorous implementation of the necessary integration. NASA is assessing integration models to determine the best utilization of industry and government skills and knowledge and the most efficient and timely decision process in order to execute our missions. Acquisition strategies, including those in the area of integration, will be announced as soon as appropriate.

Enclosure