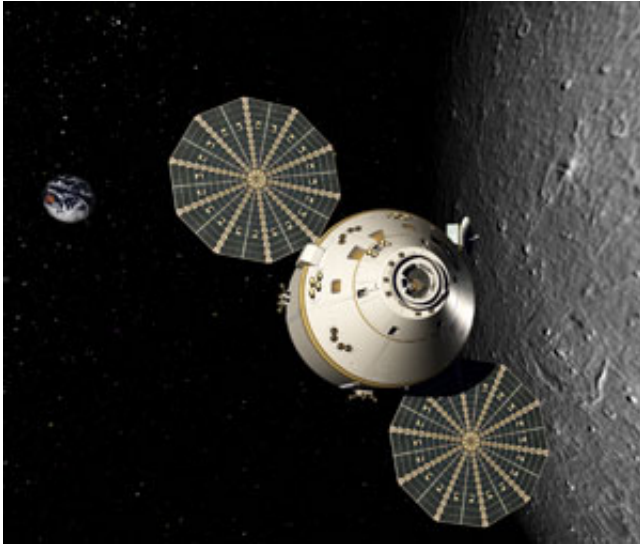


Reviews Document NASA's Progress on Next Human Spacecraft

24 May 2007



Orion in lunar orbit. Image credit: Lockheed Martin Corp.

NASA this week wrapped up six months of system requirements reviews for the Orion spacecraft, the Ares launch vehicles and other support systems, bringing together the Constellation Program's list of basic capability needs.

The Constellation Program is developing a new space transportation system that will take astronauts to Earth orbit, the moon, and eventually to Mars.

The basic program architecture for design, development, construction and operation of the rockets and spacecraft remains unchanged as a result of the reviews, but it now has a firmer foundation built through extensive requirements allocation, reconciliation, analyses and validation testing.

A "baseline synchronization" on May 23 followed individual systems requirements reviews, or SRRs, by the Constellation Program and the Orion, Ares, Ground Operations, Mission Operations and

Extravehicular Activity (spacewalk) projects. The synchronization effort was designed to identify any conflicts or gaps between and among the projects and the program and to establish a plan for resolving those issues.

"This has been an eventful spring, known as the 'season of SRRs,'" said Jeff Hanley, Constellation Program manager at NASA's Johnson Space Center, Houston. "This summer will bring a new season of rolling system definition reviews that will finish our requirements for initial mission capability and set us up for our first preliminary design reviews."

The Constellation requirements work was completed at the same time the program was dealing with other significant challenges, including development of an integrated test schedule, a mission manifest and a budget profile that will support its next 20 years of work.

The program also closely followed the work of NASA's Lunar Architecture Team, which is formulating the requirements for a lunar surface outpost development and scientific research activities. A lunar architecture system requirements review is expected in spring of 2009. "This is an impressive accomplishment in a short period of time, and I'm pleased with the dedication and cooperation across projects and attention to detail that has gotten us this far," said Chris Hardcastle, Constellation Program systems engineering and integration manager at Johnson.

The next series of reviews will begin with the Orion system definition review in August and continue through another Constellation Program baseline synchronization in March 2008. System definition reviews focus on emerging designs for all transportation elements and compare the predicted performance of each element against the currently baselined requirements.

The next significant milestones for the Constellation Program are a preliminary design review series in summer 2008 and a critical design review series in early 2010.

Source: NASA

APA citation: Reviews Document NASA's Progress on Next Human Spacecraft (2007, May 24) retrieved 19 January 2022 from <https://phys.org/news/2007-05-document-nasa-human-spacecraft.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.