NASA's commercial crew partners focus on testing, analysis to advance designs

July 1 2014, by Stephanie Schierholz

This graphic depicts the goal of NASA's Commercial Crew Program (CCP) heading into the Commercial Crew Transportation Capability contract known as CCtCap. This phase of the CCP will enable NASA to ensure a company's crew transportation system is safe, reliable and cost-effective. The certification process will assess progress throughout the production and testing of one or more integrated space transportation systems, which include rockets, spacecraft, missions and ground operations. Requirements under CCtCap also will include at least one crewed flight test to the space station before certification can be

granted. Credit: NASA/Greg Lee

NASA's aerospace industry partners are taking their designs and operational plans for the agency's Commercial Crew Program (CCP) through a series of comprehensive tests, evaluations and review boards this summer as they move through important milestones – all with an eye on launching people into orbit from American soil by 2017.

To meet milestones established in Space Act Agreements with NASA, the companies are completing specific assessments such as materials stress tests, engine firings and analysis, and system tests. The companies' engineers use data gathered from these tests to refine the design, then NASA's team uses the data to ensure the tests satisfy milestone objectives that provide confidence a spacecraft system or program is progressing toward its goals.

"A vast array of testing and work goes into even the smallest subsystem of a spacecraft, so getting to the point where our partners evaluate integrated spacecraft, launch systems and operation details is a massive achievement for our partners," said Kathy Lueders, program manager for CCP.

Blue Origin continues to make steady progress in the development of its Space Vehicle as the company moves toward an interim design review of the spacecraft's subsystems.

The Boeing Company is preparing for a critical design review that will determine whether the integrated design, systems, software and operations plans for its CST-100 spacecraft are ready for the production of models for extensive testing that simulates the demands of space travel.

In May, Sierra Nevada Corporation (SNC) tested the main propulsion and reaction control systems (RCS) of its Dream Chaser spacecraft to advance its design to a production version. SNC is preparing to perform additional RCS vacuum environment tests, simulating flight-like conditions that will enable the company to further examine and certify system performance.

SpaceX is preparing to test the structural integrity of its Dragon spacecraft to verify it will stand up to the forces and stresses exerted on it during launch, while in orbit and through re-entry into Earth's atmosphere.

Milestones achieved by NASA's CCP partners continue to advance commercial spacecraft and transportation systems from design to reality. The successes of NASA and American aerospace companies are ushering in a new generation of space transportation capabilities, which will enable new opportunities for people to live and work in space.

Later this year, NASA plans to award one or more Commercial Crew contracts that will provide the agency with commercial services to transport astronauts to and from the International Space Station by the end of 2017.

Provided by NASA

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