
NASA
COMMERCIAL CREW PROGRAM
LAUNCH AMERICA

Commercial Human Spaceflight

- In 2010, NASA established a philosophy to engage and partner with commercial industry to develop a crew transportation systems (CTS) that would meet the agency's low-Earth orbit requirements and foster a new human spaceflight industry

- Since that time, the Commercial Crew Program (CCP) in partnership with American aerospace industry has accomplished a great deal to make that philosophy a reality

Vision

The vision of commercial human spaceflight to low-Earth orbit is a robust, vibrant enterprise with many providers and a wide range of private and public users.

A successful human space transportation system will strengthen the International Space Station Program, allow NASA to focus on deep-space exploration, potentially reduce the cost of human access to space and significantly contribute to the national economy.

Leading to:

CCP NASA Purpose

Safe transport of NASA and NASA-sponsored astronauts to and from station.

CCP Public Purpose

Support the development of non-NASA markets for commercial human transportation services to and from low-Earth orbit.

Framework*

Given this, the framework should:

- Accommodate a diverse set of people (e.g., astronauts, international partner personnel, scientists, spaceflight participants) for a variety of reasons (e.g., science, research, station operations, tourism), including NASA personnel as crew or participants
- Support multiple commercial systems
- Incorporate requirements and a concept of operations that are as high-level as possible, providing commercial providers with maximum flexibility to propose a variety of safe and cost-effective system solutions
- Rely on NASA human spaceflight certification for International Space Station crew transportation missions. This will not cover the certification of other NASA missions or non-NASA missions
- Culminate with FAA licensing with NASA human spaceflight certification and technical mission assurance oversight

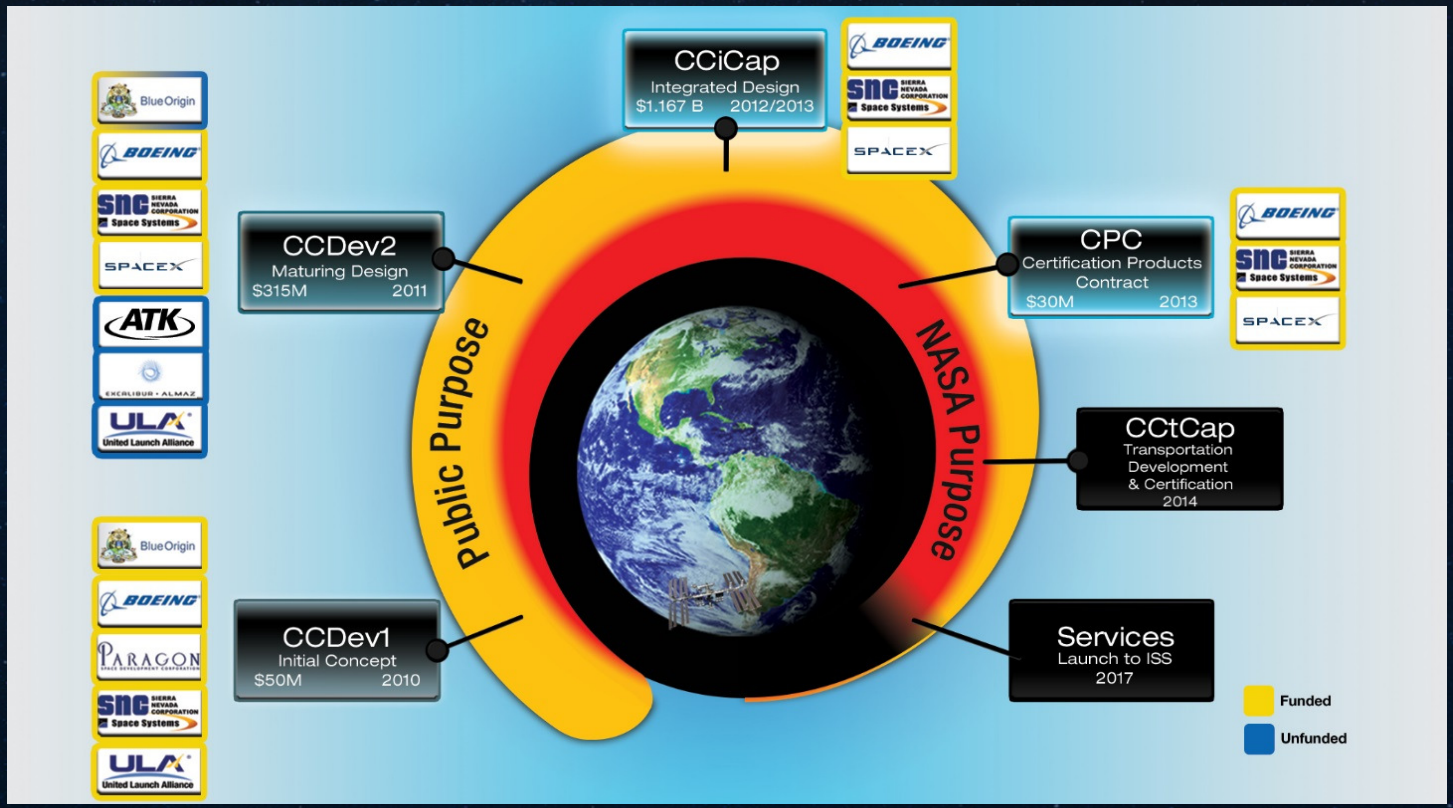
* Phil McAlister briefing to Exploration Enterprise Workshop in May 2010

Our Approach*

- Competition through pre-negotiated, milestone-based agreements that support the development, testing and demonstration of multiple systems.
- Require an end-to-end transportation solution, but will encourage the development of a range of launch vehicle and spacecraft combinations.
- Some amount of industry investment will be included as part of any agreement.
- Clearly and promptly state NASA's safety requirements and ensure that they are met.
- Lead to the competitive selection of one or more commercial service providers through firm-fixed price contract(s).

* Phil McAlister briefing to Exploration Enterprise Workshop in May 2010

Looking Back - How Have We Done?



- Our stair-step investment and contract process supported eight commercial systems, including three end-to-end transportation systems
- The instruments accommodated a diverse set of concepts and capabilities
- We provided high-level requirements for performance and mandatory requirements for safety, giving providers the maximum flexibility for their solutions

Today - Continued Execution of Our Plan

CCtCap Requirements

- NASA certification of a commercial capability
- Four NASA crew to the station
- Critical powered cargo and other cargo to the station

CCtCap Attributes

- Established a fixed-price framework for the certification and execution of initial missions to the station
- Baselined FAA licensing for initial post-certification missions
- Continued to enable commercial usage of the developed system

Most importantly, under all of our instruments we are continuing our partnership with industry.

Going Forward

Our strategy lays the foundation for and enables a robust commercial crew transportation capability service for the station

- Continue weighing our requirements and the impact to industry
- Continue using a commercial model to meet our needs
- Continue assisting maturing commercial capabilities through collaboration

Other agencies are helping by:

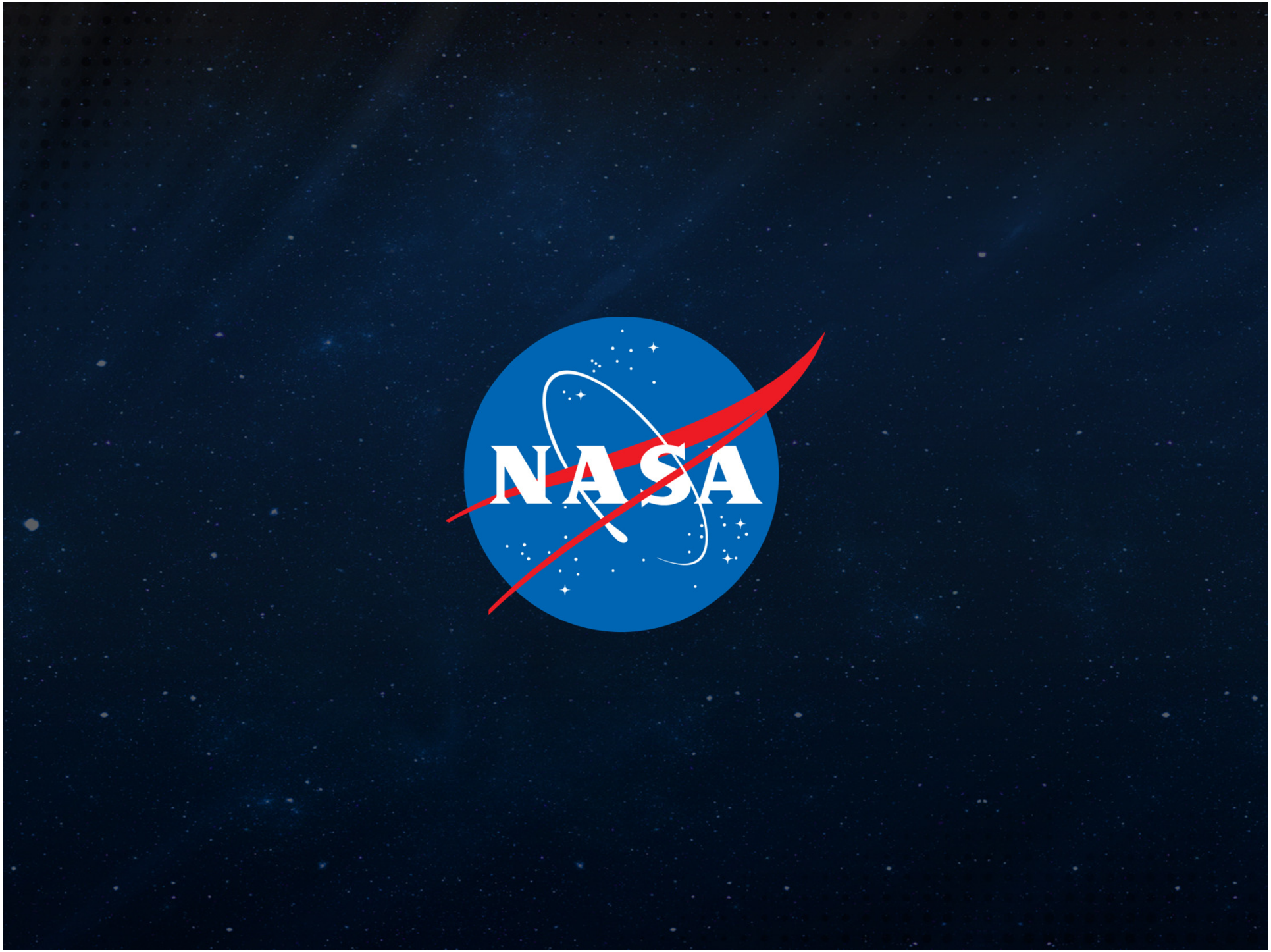
- Working with us as we execute this hybrid model (government need; commercial instrument)
- Working to keep our needs in mind while developing their strategies

Industry can help by:

- Continuing to perform and mature capabilities and markets
- Continuing to find new commercial uses for the station and other low-Earth orbit opportunities
- Collaborating to develop industry-wide standards
- Coming up with innovative ways to collaborate or leverage our missions

Summary

The Commercial Crew Program continues to execute its mission under the framework that was outlined in 2010. This allows industry to meet our critical needs, while providing a stepping stone to the future of commercial space.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