

Collaborations for Commercial Space Capabilities (CCSC) 2

Pre-Proposal Conference

Phil McAlister, Angela Hart, Dana Hutcherson, Dennis Stone
Commercial LEO Development Program and Commercial Crew Program
Space Operations Mission Directorate
November 7, 2022

Agenda



Welcome
Kelly Rubio

Introduction
Phil McAlister

**Commercial Crew
Program Overview**
Dana Hutcherson

**Commercial LEO
Development Program
Overview**
Angela Hart

CCSC 2 Announcement
Dennis Stone

Q&A

PANEL: CCSC2 INDUSTRY BRIEFING



Phil McAlister
*SOMD Commercial Spaceflight
Development Director*



Angela Hart
*Commercial LEO Development
Program Manager*



Dana Hutcherson
*Commercial Crew Program Deputy
Program Manager*



Dennis Stone
Commercial LEO Development Program



Kelly Rubio
Agreements Officer

Kelly Rubio, Agreements Officer

Procurement Office
NASA Johnson Space Center

National Aeronautics and
Space Administration



Welcome

To ask questions, write the question in Teams chat or email to:

PRE-PROPOSAL CONFERENCE LOGISTICS

- A copy of this presentation has been posted on the CCSC2 website at:
<https://cms.nasa.gov/jsc/procurement/ccsc2>
- Clarifications concerning the way in which NASA conducts business today will be answered in the Question and Answer period.

RESPONSES TO QUESTIONS

- Questions will be answered during this industry briefing at the end
- Verbal responses to questions will not be considered official.
- Questions submitted via MS Teams Q&A or email may be answered verbally and in writing. Answers posted to GPE will be considered official responses.
- If a difference exists between verbal and written responses to questions, the written responses shall govern.

GOAL of TODAY'S INDUSTRY BRIEFING

1. Inform industry about the draft Announcement for Collaborations for Commercial Space Capabilities 2
2. Answer questions about the Announcement and get industry feedback on the Announcement
 - The Government will respond officially to all questions submitted by posting them to the Government-wide point of entry (GPE) via sam.gov and CCSC2 websites.

Disclaimer:

- These slides are for *information and planning purposes only*.
- This presentation shall *not be construed as a commitment by the Government* or as a comprehensive description of any future requirements.

OMBUDSMAN

- Ombudsman (NFS 1852.215-84): “...before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the Contracting Officer for resolution ... If resolution cannot be made by the Agreement Officer, interested parties may contact the installation ombudsman ...”
- JSC Ombudsman:
Donna M. Shafer
JSC Associate Director Phone: 281-483-4258
Email: donna.m.shafer@nasa.gov
Lyndon B. Johnson Space Center
2101 NASA Parkway, Mail Code AA
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Phil McAlister, Director

Commercial Spaceflight Development Division
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Introduction

To ask questions, write the question in the **MS Teams chat**

-
- NATIONAL SPACE POLICY** *of the*
UNITED STATES OF AMERICA
- DECEMBER 9, 2020



Advantages of Partnering with NASA

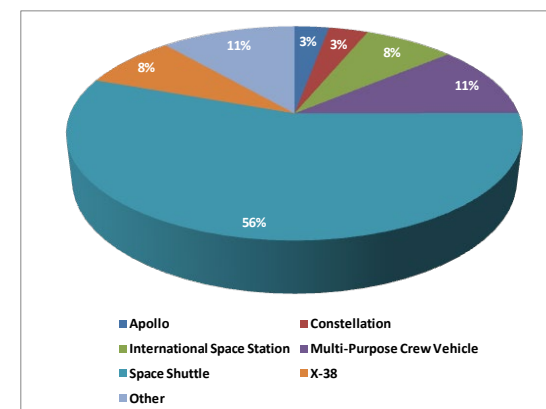


- NASA's recent experience with the Commercial Cargo and Crew Programs demonstrates that companies receive significant value from partnerships with NASA, outside of direct funding. For example:

- Technical Interchange Meetings – informal forums where NASA and industry experts meet to discuss detailed topics in a collaborative fashion where a free exchange of ideas is encouraged. TIMs allow quick identification and resolution of technical issues, at an engineer-to-engineer level.

- Data Sharing – NASA transfers knowledge through the distribution of current and historical technical products including: Documents, drawings, test plans, and test results. NASA received over 2,500 of these data requests during CCP.

- Our partners can leverage these data products to accelerate their crew transportation system development efforts and to avoid “reinventing the wheel”.



Breakdown of Partner Data Requests by Program

Dana Hutcherson, Manager
Commercial Crew Program Deputy
NASA Kennedy Space Center

National Aeronautics and
Space Administration



Commercial Crew Program Overview

To ask questions, write the question in the **MS Teams chat**

COMMERCIAL CREW

National Aeronautics and
Space Administration



LAUNCH AMERICA





Advancing Human Spaceflight

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. NASA's Commercial Crew Program serves two purposes:

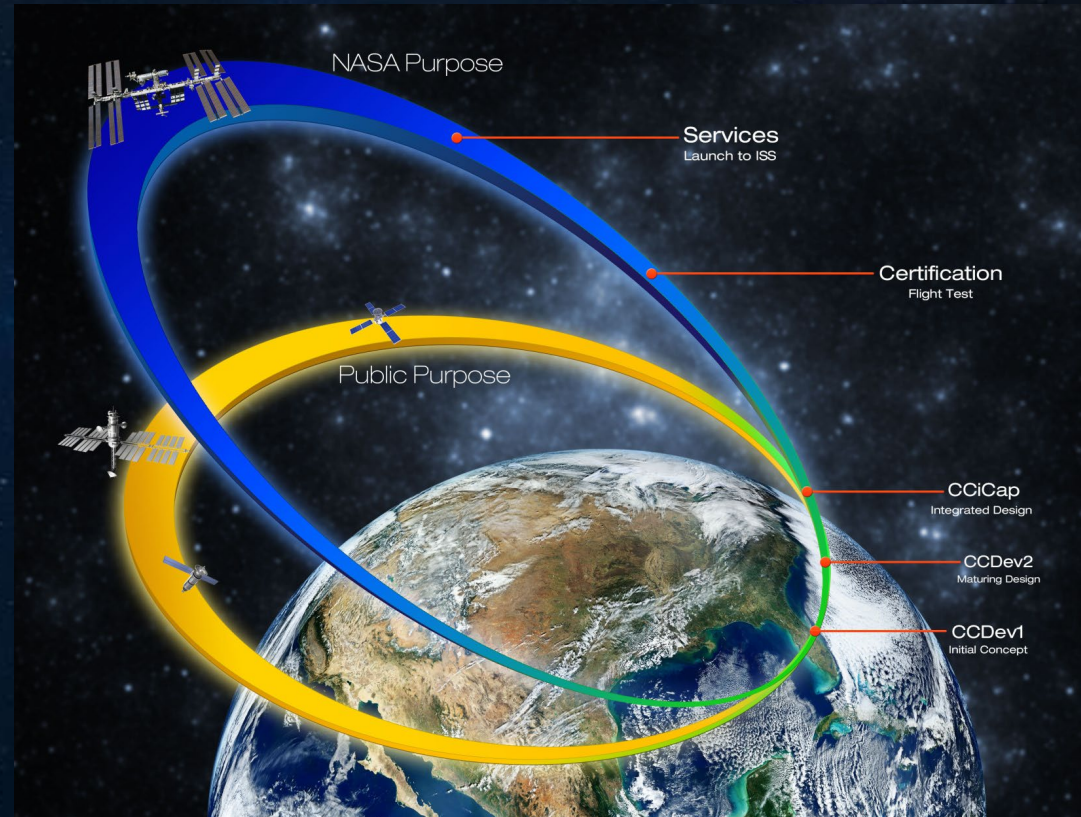
Public Purpose

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

NASA Purpose

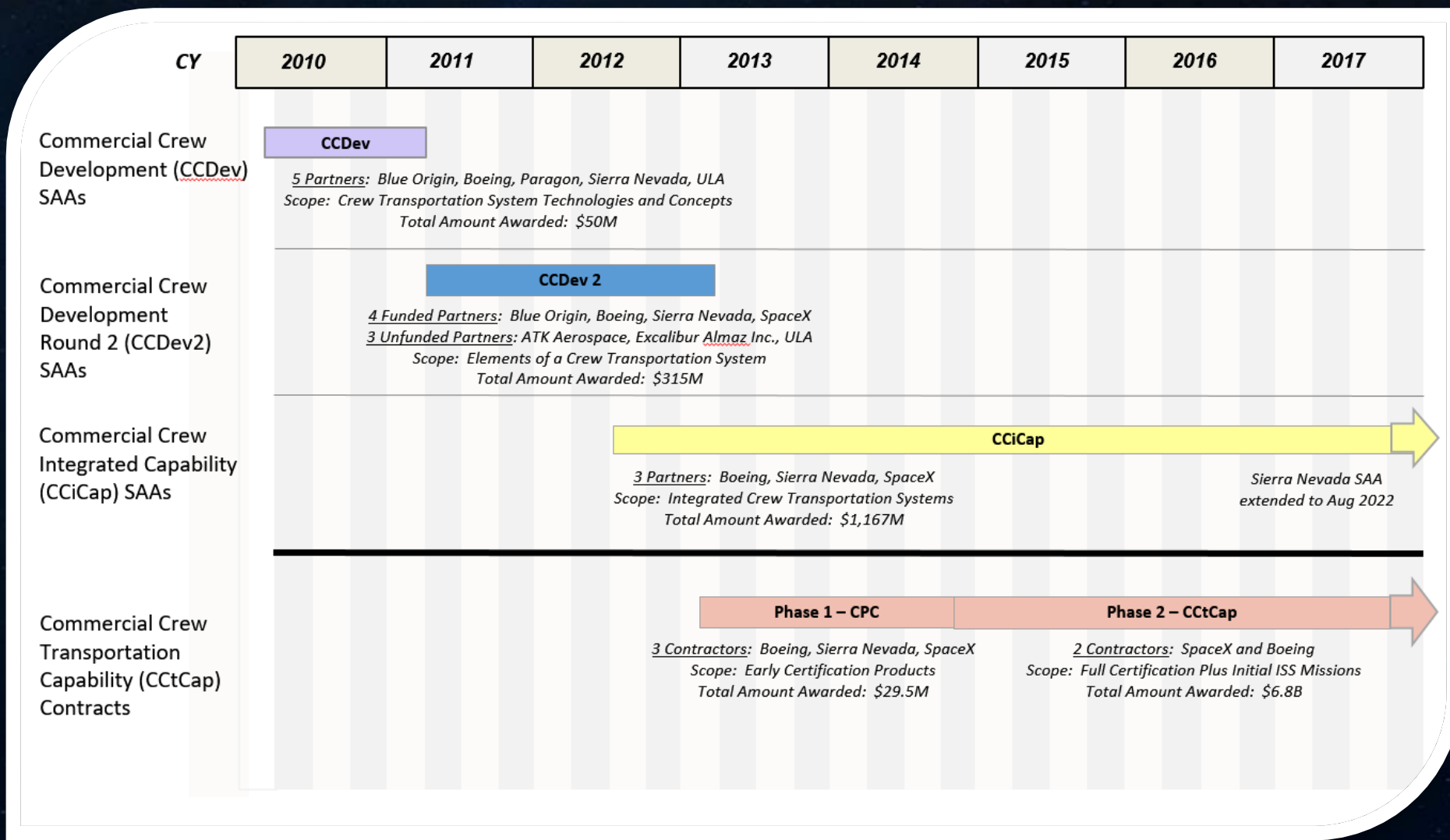
Safe transport of NASA and NASA-sponsored astronauts to and from the station.

ACQUISITION



- 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

ROADMAP



A NEW ERA

Regular and Reliable Transportation

Commercial crew spacecraft offer regular, reliable crew transportation to and from the International Space Station returning human launch capabilities to the United States and supporting a continuous USOS presence on ISS

Parallel Path

The agency's work to turn over low-Earth orbit astronaut transportation to commercial companies, like Boeing and SpaceX, allows NASA to use other resources to develop the Orion spacecraft and Space Launch System rocket for Artemis missions to the Moon and then on to Mars

Microgravity Research

These integrated spacecraft and launch vehicles carry up to four astronauts at a time on NASA missions, with the goal of helping maintain a crew of seven to increase scientific research time on the one-of-a-kind orbiting laboratory



SUMMARY

NASA's Commercial Crew Program is continuing to execute the plans established at the program's inception in April 2011.

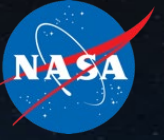
The program is in a critical phase as we go execute full-up certification and services contracts.

NASA evaluating how to continue enabling transportation in LEO to support Commercial destinations and other LEO services.

COMMERCIAL
CREW

LAUNCH AMERICA





Angela Hart, Manager

Commercial LEO Development Program Office
NASA Johnson Space Center

Commercial LEO Development Program Overview

To ask questions, write the question in the **MS Teams chat**



Commercial LEO Economy Goals

1. Create a robust commercial LEO marketplace with commercially-owned and operated LEO destinations that are safe, reliable, cost-effective and allows NASA to be one of many customers in space.
2. Ensure NASA can meet its needs in Low-Earth orbit, as it transitions from International Space Station operations to new commercial LEO destinations and other commercial services in LEO.
3. Maintain a sustained presence in LEO and pre-eminent U.S. leadership in LEO.
4. Drive down costs through LEO commercialization so that NASA can free up resources to be used for future missions.
5. Utilize inventive, nontraditional agreements for acquiring commercial space goods and services to meet NASA requirements.

Vision for LEO Economy: A World of New Possibilities



NASA's Future LEO Needs

NASA estimates the agency's future needs in low-Earth orbit will require:

- Continuous accommodations and training for at least two crew members
- The ability to support a national orbiting laboratory in LEO
- Conducting approximately 200 investigations annually to support human research, technology demonstrations, biological and physical science with ability to launch and return payload experiments and samples as required
- Continued climate and environmental monitoring
- Ability to support NASA exploration demonstration and testing needs



Science



Human Research



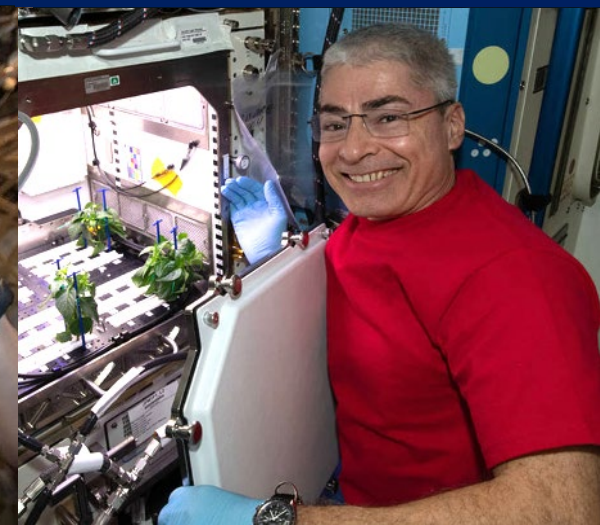
Technology Demonstrations



Crew Accommodations and Training

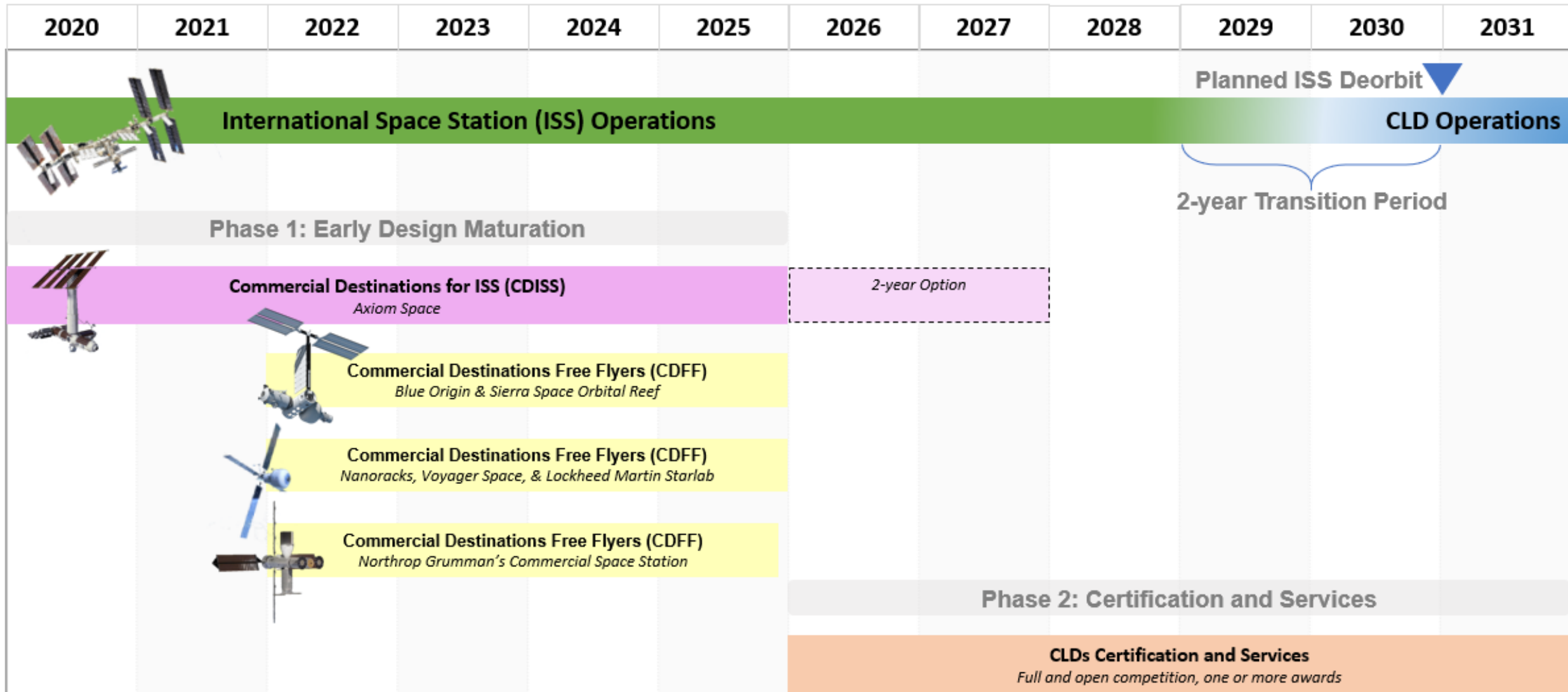


National Lab Services



Physical and Biological Research

NASA Acquisition Strategy Schedule





Dennis Stone
Chair & Business Lead
CCSC2 Evaluation Panel

Announcement Overview

To ask questions, write the question in the **MS Teams chat**

CCSC2 OBJECTIVE

- Purpose is to advance commercial space-related efforts that primarily benefit the development and growth of a robust and competitive U.S. commercial economy in LEO, including continued access to and growth of a human presence in LEO
- Will facilitate access to NASA's vast spaceflight resources including technical data, expertise, services, facilities, equipment, lessons learned, and NASA-developed technologies

SCOPE

- Proposed Capabilities may include (but not be limited to):
 - Crewed or uncrewed space destinations of any type and combination, including ones that principally reside in space, sortie from/to space, are crew tended, and/or that may reconfigure.
 - Transportation capabilities of any type for crew and/or cargo to and from orbit.
 - Space suits and/or personal spacecraft.
 - Capabilities for in-space research, manufacturing and/or assembly.
 - Orbital debris management.
 - Power stations, power beaming, propellant depots.
 - In-space servicing and/or logistics.
- Should support a continuous U.S. human presence in LEO
- Must principally benefit low Earth orbit
- Should be safe, reliable, and cost effective so that non-government customers can afford the capabilities.
- Proposals for subsystems and individual technologies (e.g. instruments, components) are not sought

SCOPE - CONTINUED

- Integrated LEO space capabilities so that the emerging products or services are commercially available to government and non-government customers within approximately the next five to seven years and extend beyond ISS retirement
- Can propose multiple capabilities in one proposal or in separate proposals
- May propose capabilities that align with other U.S. Government efforts the participant may have, but specific activities funded under any active U.S. Government contract or agreement shall not be supported by NASA under any CCSC2 SAAs.

APPROACH

- CCSC2 is to be managed and funded by the Commercial LEO Development Program at JSC and the Commercial Crew Program at KSC/JSC for crew transportation-focused partnerships.
- NASA will award one or more Unfunded Space Act Agreements (SAAs)
 - No exchange of funds
- NASA will facilitate access by CCSC2 Partners to NASA's vast spaceflight resources including technical data, expertise, services, facilities, equipment, lessons learned, and NASA-developed technologies.
 - Desired resources should be identified in proposals
 - Non-binding
 - Resource requests are made during execution to provide flexibility
 - NASA will determine if requested resources are available

MILESTONES AND SCHEDULE

- Execution of the Unfunded SAAs is targeted for 2Q FY 2023
- SAAs will be for 5 years unless a shorter term is proposed by the Participant
- Each proposal shall define milestones which measure progress and demonstrate continued viability of the Partner's progress
- May include
 - Major design reviews
 - Significant development, testing, and evaluation activities.
 - Business progress such as financing and marketing achievement.
- The milestones must have objective success criteria
- Should be approximately one milestone per quarter

LEGAL COMPLIANCE

- To be eligible for award of a CCSC2 Unfunded SAA, an entity must be organized under the laws of the US or of a State and be more than 50 percent owned by US nationals.
- Section 2.3 of the Announcement details additional compliance requirements

GOVERNMENT RESOURCES

- Base Support – Generally same for all CCSC2 Partners and may consist of:
 - NASA partnership point of contact
 - NASA attendance at regularly scheduled reviews of progress under the partnership
 - NASA observation of Partner milestones
 - NASA review of Partner-provided data
 - Access to NASA technical data, lessons learned, and expertise support.
- Specific Support – Unique to each Partner and may consist of:
 - NASA assessments, analyses, testing, and/or other NASA unique services
 - Use of NASA equipment and/or facilities
 - Loan of NASA property
 - Information about NASA-developed technologies
 - Assistance in obtaining Software Usage Agreements (SUA), Data Usage Agreements (DUA), License Agreements, and/or Loan Agreements.
- Specific support requested should be described by the Participant in Proposal Appendix 2
- You may contact NASA Partnership Offices to explore resources

PROPOSAL CONTENT

- | | | | |
|---------------|-------------------------------|---------|----------------|
| • Section I | Executive Summary | 2 pages | |
| • Section II | Relevance to NASA | } | 10 pages total |
| • Section III | Business Approach | | |
| • Section IV | Technical Approach | | |
| • Appendix 1 | Proposed Space Act Agreement | } | No page limit |
| • Appendix 2 | Proposed Government Resources | | |
| • Appendix 3 | Supplemental Business Data | | |

SECTION 1: EXECUTIVE SUMMARY

- Describe the prominent and distinguishing features of the business plan and technical approach
- Summarize
 - Capability(ies) planned by the company that are relevant to the purpose stated in Announcement section 1.2,
 - Business and technical approach to bring the proposed capabilities to market, and
 - If known, government resource types that would be requested under the proposed partnership (e.g. testing, access to expertise).
 - Confirms eligibility as specified in sections 2.2 and 2.3
 - Stands alone and cannot directly reference other sections

SECTION 2: RELEVANCE

- Describe how the capability has a specific, identifiable alignment with Section 1.2 of this Announcement.



1.2 Purpose

NASA is soliciting proposals from all interested U.S. private sector entities that wish to enter into Unfunded SAAs for Collaborations for Commercial Space Capabilities 2 (CCSC2). The purpose of these agreements is to advance commercial space-related efforts that primarily benefit the development and growth of a robust and competitive U.S. commercial economy in LEO, including continued access to and growth of a human presence in LEO, by facilitating access to NASA's vast spaceflight resources including technical data, expertise, services, facilities,

equipment, lessons learned, and NASA-developed technologies. This Announcement and subsequent agreements with industry partners are referred to as Collaborations for Commercial Space Capabilities 2 (CCSC2).

This Announcement seeks proposals to support development of integrated LEO capabilities that significantly contribute to the sustainment of a LEO ecosystem. These capabilities must be of a type that extends beyond the retirement of the International Space Station (ISS) and that should support a continuous U.S. human presence in LEO. Proposals for subsystems and individual technologies (e.g. instruments, components) are not sought by this Announcement.

Participants (those responding to this Announcement) will determine the specific Capability(ies) to propose, its business case and funding, its development, its implementation, and its operation.

NASA anticipates that such proposed Capabilities may include (but not be limited to):

- A. Crewed or uncrewed space destinations of any type and combination, including ones that principally reside in space, sortie from/to space, are crew tended, and/or that may | reconfigure.
- B. Transportation capabilities of any type for crew and/or cargo to and from orbit.
- C. Space suits and/or personal spacecraft.
- D. Capabilities for in-space research, manufacturing and/or assembly.
- E. Orbital debris management.
- F. Power stations, power beaming, propellant depots.
- G. In-space servicing and/or logistics.

These Capabilities should be available to U.S. Government and/or commercial customers within five to seven years from the start of the CCSC2 SAAs and not be intended solely for U.S. Government use. Capabilities must principally benefit low Earth orbit and should be safe, reliable, and cost effective so that non-government customers can afford the capabilities. One proposal may cover one or more capabilities. Participants may also submit multiple proposals for different capabilities. Participants will submit one proposal for each CCSC2 SAA that they are seeking. One proposal may cover one or more capabilities.

SECTION 3: BUSINESS APPROACH

- B1 - Business Overview
- B2 - Development Plan
- B3 - Compliance
- B4 – Financing Plan
- B5 - Business Risks

SECTION 4: TECHNICAL APPROACH

- T1 – Capability Concept
- T2 - Development Plan
- T3 – Safety and Mission Assurance
- T4 – Technical Risks

APPENDIX I: PROPOSED SPACE ACT AGREEMENT

- Use template SAA is included in Appendix A of the Announcement
 - Also released as a separate Word document
- Complete parts of SAA highlighted in yellow, including:
 - Table of milestones in Article 4
 - Executive summary that is publicly releasable in Appendix 1
- Changes to terms & conditions are discouraged
 - Must include rationale, and will be presented to Selection Authority
- Note: Executed CCSC2 SAAs will be publicly posted without redaction

APPENDIX 3: SUPPLEMENTAL BUSINESS DATA

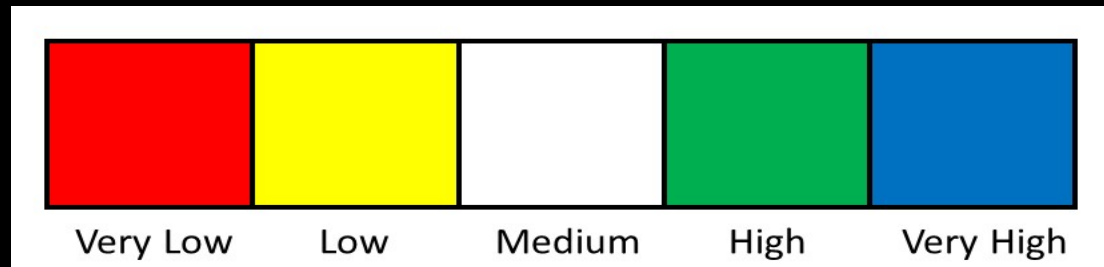
- Data to substantiate the business approach, limited to:
 - Resumes of key personnel
 - Cost data
 - Historical and pro-forma financial statements, letters of intent, and other business data supporting the financing plan

EVALUATION PROCESS – STEP 1

- Determine that proposals comply with requirements of section 3.1 of the Announcement.
- Participant Evaluation Panel (PEP) will then review the Executive Summary only.
- The PEP shall not continue evaluation of any proposal when it is determined from the Executive Summary that the proposal is unacceptable because
 - (1) it does not represent a reasonable initial effort to address the objective of the CCSC2 Initiative; or
 - (2) clearly demonstrates that the Participant does not understand the objective.

EVALUATION PROCESS – STEP 2

- The second step of the process will be an evaluation of the full proposals that are compliant with this Announcement to assess how well the proposal meets the following criteria:
 - Relevance of the proposed capability to purpose of this Announcement as described in section 1.2.
 - Feasibility of the business approach to achieving commercial availability of the proposed capability.
 - Feasibility of the technical approach to achieving commercial availability of the proposed capability.
 - Feasibility for NASA to provide the requested resources.
- NASA may ask clarifying questions
- PEP will assign a color rating for each of these criteria
- Will also estimate the cost of the requested resources.
- Proposals most favorably evaluated will be selected for next step, with consideration given to the range of capabilities proposed.



EVALUATION PROCESS – STEP 3

- Due diligence with participants whose proposals were selected in the previous step.
- May include virtual and/or on-site meetings.
- Participants will be notified of selection for due diligence at least one week in advance of the first such meeting.
 - Notification will include findings from the initial evaluation.
- During diligence meetings, participants will have the opportunity to present their proposal and respond to the findings.
- Milestones may be negotiated.
- At the conclusion of due diligence, NASA shall review and revise, if necessary, the evaluation results of the previous step.

PROPOSAL EVALUATION – STEP 4

- Results of the proposal evaluation will be presented to the Selection Authority (SA)
- SA will compare the proposals against the criteria of the Announcement and selects a portfolio of one or more participants whose proposals best meets the objectives of the CCSC2 Initiative.
- Additional considerations in the selection may include the range of capabilities covered, the types of Government resources requested, and the total estimated cost of Government resources requested.
- Following selection, SAAs shall be finalized, executed, and announced

Kelly Rubio, Agreements Officer

Procurement Office
NASA Johnson Space Center

National Aeronautics and
Space Administration



Q&A

CCSC2 Pre-Proposal Conference

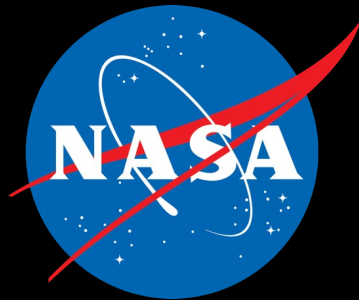
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COMMUNICATIONS

- A Blackout Notice was issued for this Agreement
 - In accordance with NASA Federal Acquisition Regulation Supplement 1815.201 (f) (i), all communications with industry will be handled by the Agreement Officer: jsc-CCSC2-competition@mail.nasa.gov
- Participants may communicate with NASA Center Partnership Offices

HOW TO GET CONNECTED

- CCSC2 Acquisition Website
 - <https://cms.nasa.gov/jsc/procurement/ccsc2>
- NASA/JSC Contract Opportunities
 - <https://sam.gov/>
- JSC Procurement Website
 - [JSC Procurement | Current Significant Acquisitions | NASA](#)
- Industry Assistance Office, JSC Bldg. 1
 - jsc-industry-assistance@mail.nasa.gov



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Thank you!