Commercial Crew Program
NAC Status Brief

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Program Goals

Commercial Crew Program Goal
- Facilitate the development of a U.S. commercial crew space transportation capability with the goal of achieving safe, reliable, and cost effective access to and from low Earth orbit (LEO) and the ISS.

CCiCap Strategic Goals
- Advance multiple integrated crew transportation systems (CTS) to crewed orbital demo by mid-decade
- Commercial Provider investment
- Affordable development costs leading to cost effective access to LEO
  - Develop a capability to LEO that supports potential customers
CCiCap SAA Structure

CCiCap is divided into two periods:

- **Base Period**: 21 months, August 2012 – May 2014. Multiple awards with expected range of $300M – $500M per award.

- **Optional Milestones Period**: Following the Base Period through orbital crewed flight demonstration. Two sets of optional milestones are requested.
  - **Optimum Funding Profile (during optional period)**: An optimized schedule to achieve a crewed orbital flight demonstration by the middle of the decade.
  - **Fixed Funding (during optional period)**: A fixed funding amount of $400M/yr per award available for optional milestones through crewed orbital flight demonstration.
CCiCap SAA Goals

- **Base Period Goals**
  - Detailed integrated design of CTS
  - Demonstrate a process to analyze, quantify, and understand risks
  - Risk reduction activities (e.g., uncrewed flight test, pad abort test, drop test)
  - Criteria and plan for industry certification of crewed demonstration flight

- **Optional Milestone Goals**
  - Complete test activities leading to industry certification for demonstration flight
  - Final milestone of an orbital crewed demonstration flight
    - Mission Duration: Minimum of 3 days on-orbit
    - Orbital Altitude: Achieve an orbit with a minimum altitude of 200nm
    - Demonstrate controlled orbital maneuverability (for example: a simulated rendezvous)
    - Demonstrate system sizing sufficient for four crew members

- **Safety Goals**
  - Foster a strong safety culture in the commercial space flight industry
  - Demonstrate safety processes that include healthy tension, strong internal checks and balances, and value added independent review
Overall Strategy

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<th>FY10</th>
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<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
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<td>Paragon</td>
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**Integrated Capability (iCap)**

CCDev1 Element Design
- Blue Origin
- Boeing
- Paragon
- Sierra Nevada
- ULA

CCDev2 Element Design
- Blue Origin
- Boeing
- Sierra Nevada
- Space X
- ATK
- ULA
- EAI

**Notional**

- CCiCap
- Optional Milestones
- NASA Certification
- ISS Missions
- Transition to Services

*Notional – the number of awards are to be determined

*Number of awards to conform to budget
Certification Planning

- Content and scope of certification activity is evolving

- Several near-term certification activities are in work
  - Reviewing and updating CCP verification statements
  - Developing Program certification processes and CTS Certification Plan
  - CCP Acquisition Planning Team developing and assessing options that enable NASA certification and ISS services
Summary

- CCP has laid out a near term path to continuing integrated design.
- CCP has begun detailed planning leading to an integrated path for a comprehensive certification process.

Bottom Line:
- Overall success of the CCP (both Government and Industry) is predicated upon a comprehensive and streamline certification process.