

National Aeronautics and  
Space Administration



## Virtual Industry Forum

### Announcement of Collaborative Opportunity (ACO)

### Utilizing Public-Private Partnerships to Advance Emerging Space Technology System Capabilities NNH15ZOA001K

Presented by: James Reuther, Bonnie James | STMD | 6.17.2015 | [www.nasa.gov/spacetech](http://www.nasa.gov/spacetech)



# STMD Virtual Industry Forum – ACO Agenda



## Agenda:

- **Introduction of Presenters**
  - James Reuther, STMD, Deputy Associate Administrator for Programs
  - Bonnie James, STMD, Senior Investment Strategist
  - Tom Weih, NASA Procurement Official
- **Introduction: NASA Space Technology Mission Directorate (STMD)**
- **Ground Rules**
- **Objectives**
- **Background**
- **Solicitation Overview**
- **Questions**
  - Review of submitted written Questions/Answers
  - Verbal questions during Q&A period of the forum

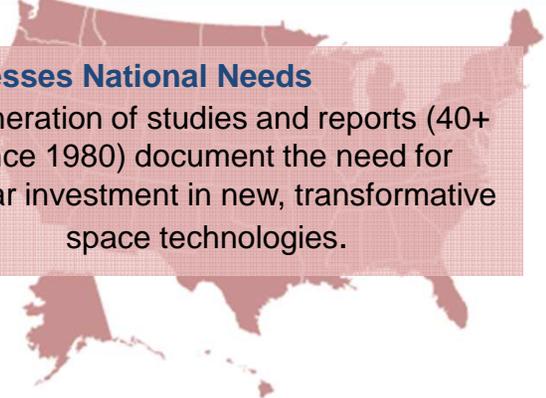
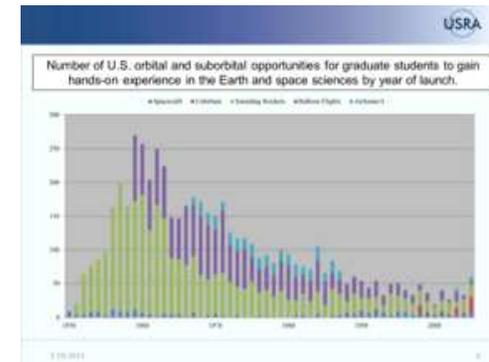
**NOTE:** Questions should be submitted to the email address listed in the solicitation: [HQ-STMD-EmergingCapabilitiesACO@nasaprs.com](mailto:HQ-STMD-EmergingCapabilitiesACO@nasaprs.com); **Submitting questions before June 17 will help ensure responses will be addressed during the forum.**

# Space Technology... ... an Investment for the Future



- Enables a **new class of NASA missions** for Exploration and Science.
- **Delivers innovative solutions** that dramatically improves space technological capabilities for NASA and the Nation.
- Develops technologies and capabilities that make NASA's missions **more affordable and more reliable**.
- Invests in the economy by **creating markets and spurring innovation** for traditional and emerging aerospace business.
- **Engages the brightest minds** from academia in solving NASA's tough technological challenges.

**Addresses National Needs**  
A generation of studies and reports (40+ since 1980) document the need for regular investment in new, transformative space technologies.

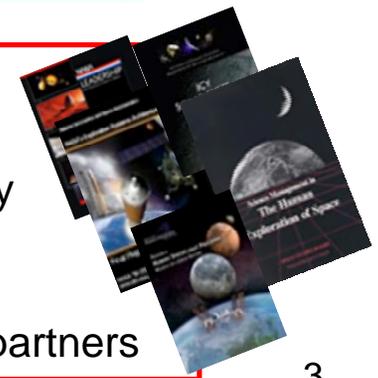



**Value to NASA**

**Value to the Nation**



**Who:**  
The NASA Workforce  
Commercial Space / Industry  
Academia  
Small Businesses  
Other Government Agency partners





# Enabling the Space Technology Pipeline

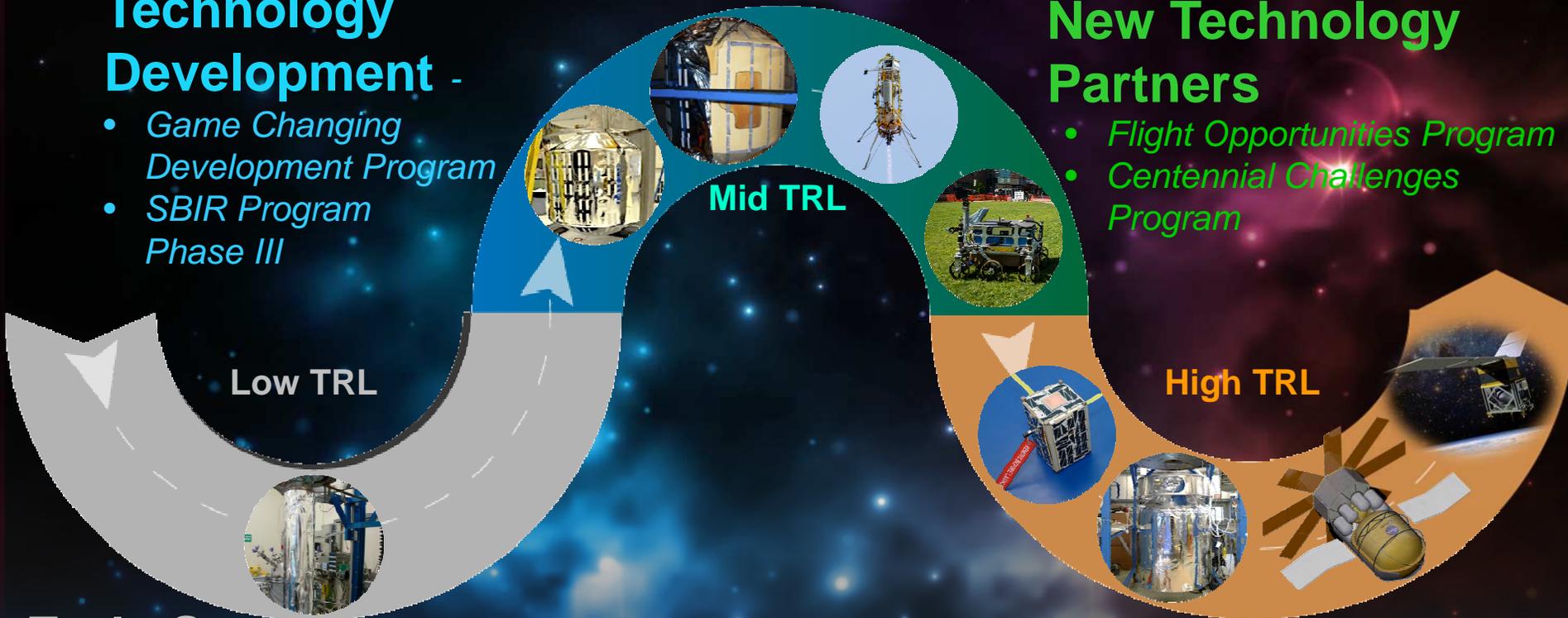


## Technology Development -

- *Game Changing Development Program*
- *SBIR Program Phase III*

## New Technology Partners

- *Flight Opportunities Program*
- *Centennial Challenges Program*



Low TRL

Mid TRL

High TRL

## Early Stage

- *NASA Innovative Adv Concepts Program*
- *Space Tech Research Grants Program*
- *Center Innovation Fund Program*
- *SBIR Program Phases I & II*

## Technology Demonstrations

- *Technology Demonstration Systems*
- *Small Spacecraft Technologies*

# TECHNOLOGY PIPELINE



# STMD Successes To Date



**Solar Array Development and Testing**



**Composite Cryo Propellant Tank Testing**



**Utilizing ISS as a Technology Testbed**

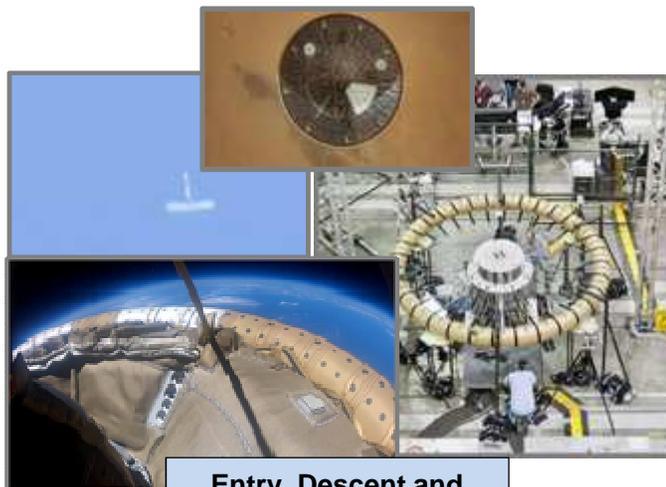
**Advanced Thrusters and Electronics Development**



JPL H6 with magnetic shielding



GRC 300M with magnetic shielding



**Entry, Descent and Landing Technology**



**EVA Suit and ECLS Technologies**



**Creating New Markets and Spurring Innovation while Engaging the Brightest Minds**



# STMD Virtual Industry Forum – ACO Ground Rules



## Ground Rules:

- NASA will make every attempt to address questions during this teleconference to clarify the content of the solicitation.
- Questions and comments about anything pertaining to this solicitation, including the Virtual Industry Forum, should be submitted via email to: [HQ-STMD-EmergingCapabilitiesACO@nasaprs.com](mailto:HQ-STMD-EmergingCapabilitiesACO@nasaprs.com)
- Questions that require further assessment will be resolved as soon as possible after the forum, and the answers will be posted to the Frequently Asked Questions (FAQ) page on NSPIRES.
- The Q&As outlined in the FAQs on NSPIRES take precedence over all verbal discussions. Please refer to the FAQs for official NASA responses.
- NASA will not provide evaluations, opinions, or recommendations regarding potential space technology development proposals.
- Charts presented today will be available on the website listed in the solicitation: <http://www.nasa.gov/feature/opportunities-to-foster-commercial-space-technologies>



# STMD Virtual Industry Forum – ACO Objectives



## Objectives:

- Goal/Intent of this Solicitation
  - NASA continues to embrace public-private partnerships to achieve its strategic goals for expanding capabilities and opportunities in space.
  - STMD is seeking potential partners through this ACO that focus on industry developed space technologies that can enhance commercial space and benefit future NASA missions. NASA's investments in partnership with industry can accelerate the availability and reduce costs for the development and infusion of these emerging space system capabilities. Specifically, NASA is seeking to provide technical expertise, test facilities, hardware, and software to aid industry partners in maturing capabilities that can enable or enhance space vehicle systems and/or mature other closely related subsystems.
- Objective of the Virtual Industry Forum
  - Provide an overview of the solicitation released May 21, 2015
  - Address questions from potential offerors



# STMD Virtual Industry Forum – ACO Background



## **Background:**

- NASA is soliciting proposals from all interested U.S. private sector enterprises that wish to enter into non-reimbursable Space Act Agreements (SAA) to collaborate for the accelerated development and testing of critical technologies for emerging space system capabilities.
- The purpose of these agreements is to advance commercial space-related efforts by facilitating access to NASA's extensive resources including facilities, technical expertise, hardware, and software.
- Technologies developed under these public-private partnerships should target rapid infusion of the resulting capabilities into operational space systems.
- It is the responsibility of each proposer to develop the partnership with a NASA Center to coordinate roles, responsibilities, resources, and other activities to reach the technology development goals of the project.
- Offerors shall use the list of NASA Center Points of Contact provided as Attachment 7 to begin the partnership development process. The strength of such partnership arrangements will be evaluated as part of this Announcement.



# STMD Virtual Industry Forum – ACO Background



## **Background (continued):**

Under this ACO NASA will only consider proposals for partnerships in the following technology topic areas:

Topic 1: Suborbital Reusable and Small Satellite Launch Systems  
Development

Subtopic 1 – Air Launch Systems

Subtopic 2 – Ground Launch Systems

Subtopic 3 – Affordable Auxiliary Systems

Subtopic 4 – Composite Structures for Small Launch Systems

Subtopic 5 – see ACO Topic 5

Topic 2: Wireless Power Transfer Development

Topic 3: TPS Materials and Systems Development

Topic 4: Green Propellant Thruster Technology Qualification

Topic 5: Small, Affordable, High Performance Liquid Propellant Rocket Engine  
Development

**NOTE:** Proposals to ACO Topic 1, sub-topic 5 should be submitted under Topic 5



# STMD Virtual Industry Forum – ACO Background



## **Background (continued):**

- Market Research
  - STMD also released the Tipping Point Appendix that compliments the objectives of this solicitation. Both solicitations embrace public-private partnerships to expand capabilities and opportunities in space. With the Tipping Point Appendix, NASA is interested in advancing new capabilities to a point that industry would complete and qualify them for market without further government investments.
  - In selecting topics, STMD considered responses received from the Tipping Point Request for Information (RFI), other recently released RFIs, as well as existing investments within NASA's technology portfolio for commercial space applications.
  - The technology topics listed in these two solicitations, when taken together, form a subset of the total field of topics that were considered by STMD for public-private partnership efforts to support commercial space interests.



# STMD Virtual Industry Forum – ACO Solicitation Overview



## **Solicitation Overview:**

- Proposed efforts must be led by U.S. industry defined as for-profit businesses that are incorporated in the United States.
- Federally Funded Research and Development Centers (FFRDCs), U.S. federal, state, and local government entities, including National Laboratories and NASA Centers are not eligible to participate as the lead responder in proposals under this ACO.
- NASA will not consider proposals that do not include a U.S. industry business as the lead proposer.
- All private sector entities must partner with a NASA Center; a NASA statement of commitment is required.
- The offeror may propose additional teaming arrangements (e.g. academia, non-profit, FFRDCs, NASA civil servants, JPL) to optimize the potential for rapid development and infusion of the space technology.
- Foreign participation is strictly prohibited on this solicitation.
- Only one proposal per technology topic or subtopic per offeror is permitted. Proposals may not cross topics.
- Award Details
  - Non-reimbursable Space Act Agreements



# STMD Virtual Industry Forum – ACO Solicitation Overview



## **Solicitation Overview (continued):**

- Key Dates to Remember
  - NOI (not required, but strongly encouraged) - due July 1
  - Proposals - due by 5:00pm Eastern on July 30, 2015
  - Start the NSPIRES submittal process as early as possible
  
- Submittal Process
  - All proposals submitted in response to this solicitation must be submitted by the Authorized Organizational Representative (AOR) at the proposing organization who is authorized to make such a submission.
  - All proposals submitted must be in electronic form. No hardcopies will be accepted.



# STMD Virtual Industry Forum – ACO Solicitation Overview



- Proposal Content
  - Quad Chart: this one page summary is required; specific details provided in solicitation; quad chart does not count against page limit.
  - Quad chart should not include restricted information (ITAR, company proprietary, sensitive).
  - Quad chart template isn't included in the solicitation but is available at <http://www.nasa.gov/feature/opportunities-to-foster-commercial-space-technologies>
  - Technical and Management section
    - ❖ Relevance to Solicitation Objectives
    - ❖ Technical Approach
  - Financial Plan Supporting the Proposed Development
  - NASA Statement of Commitment
- Evaluation Criteria (equally weighted)
  - Relevance to Solicitation Objectives
  - Technical Approach
  - Financial Plan Supporting the Proposed Development



# STMD Virtual Industry Forum – ACO Questions and Answers



## **FAQ #3:**

**Q: Does STMD plan to increase the FTE allocation at the NASA Centers to cover any new awards from this solicitation?**

**A:** No. However, STMD will re-balance FTEs across programs and projects to support selected proposals. Thus, if FTEs are available in one STMD program, but would be better used in another STMD program as a result of potential ACO awards, STMD will shift the FTE and funding allocations accordingly. Additionally, STMD will not hold the Centers to strict planning numbers below the 3 to 4 FTE level. Thus, the Centers should use their best judgment to partner with different proposers. The Centers should recognize that only a subset of proposals will be awarded and once we have made awards STMD will make every effort to work with Centers to adjust the FTE commitments vs. allocations, including the possibility of negotiating with other NASA Mission Directorates to trade FTE allocations across Centers. If a Center is able to make prior arrangements to cover the FTE under another Mission Directorate's allocation, they should submit such arrangements as part of their commitment letters on partnership proposals. STMD would welcome such arrangements.

## **FAQ #7:**

**Q: Can you clarify how we respond to ACO sub-topic 5 - in the first topic?**

**A:** The ACO refers the reader to Topic 5. For that sub-topic, proposals should be submitted under ACO Topic 5.

## **FAQ #22:**

**Q: The solicitation states that "Only one proposal per topic or subtopic per offeror is permitted." Is the term "offeror" limited to a Company or a Business Unit within that Company?**

**A:** Each proposal should focus on only one topic or subtopic. The term offeror applies to a company or separate business units within the company.



# STMD Virtual Industry Forum – ACO Conclusion



Please submit questions to the email listed in the solicitation:

[HQ-STMD-EmergingCapabilitiesACO@nasaprs.com](mailto:HQ-STMD-EmergingCapabilitiesACO@nasaprs.com)

Answers to questions will be posted to the FAQ page on NSPIRES:

Charts presented today will be available on the website listed in the solicitation:

<http://www.nasa.gov/feature/opportunities-to-foster-commercial-space-technologies>

Please periodically check this website for any further updates.

Thank you for your participation today.