FAQ:
NASA SBIR Technology Infusion and Post Phase II Opportunities

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- Sources of Information
- JPL SBIR Program Contacts

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Introduction

- This is an FAQ-type overview of NASA SBIR technology infusion (transition from Phase II into applications) and some options/ strategies that are available for pursuing post Phase II funding.
- **Blue pages: Introductory material on infusion** if you're new to SBIR. You can skip this part if you're an SBIR veteran.
- **Green pages: Specific material** if you're a JPL'er familiar with SBIR. You are encouraged to also share this information with your small business contacts.
- **Orange pages: Commercialization materials and references** – Of primary interest to companies – You are encouraged to share this information with your small business contacts.

Infusion

How does NASA define infusion success?

- SBIR infusion success is measured in several ways.
  - **Technology directly picked up by a flight project, mission or instrument** – This is the ultimate prize, but not the only one.
  - **Technology utilized in a NASA project to develop technology for a future flight project or mission –** This may include funding for further technology development.
  - **Small business supplies technology under a subcontract or a license agreement** to prime contractor responsible for a NASA flight program.
  - Technology follows any of the above paths to support a NASA flight program **following the acquisition of the small business or technology by another company.**

What are typical technology infusion mechanisms?

Infusion

- **Funded Infusion Mechanisms**
  - **Direct funding** of SBIR company via contract with a NASA Project.
  - **Subcontract or license agreement** with a third party (e. g. a prime contractor) working for a NASA project.
  - **Joint funding** involving NASA's SBIR Program and a NASA Project or other partner (private company with complementary commercial interests) to incorporate technology into a NASA program.
- **Unfunded Infusion Mechanisms**
  - NASA utilizes SBIR project deliverable in a **project or trade study** directed toward developing technology for a future flight project or mission.

(1/3) What's working in technology infusion?

Infusion

- Focus on technologies that have clear **economic and/or risk reduction impact.**
  - e. g. Significant savings in design time/effort, mass, volume, power, integration complexity/costs, etc.
- Focus on technologies with **horizontal scope** (more than one potential application, or class of applications) so they do not become obsolete if a specific application is redirected or dries up.
- Emphasize technical areas where **other NASA funding sources are lacking.**
- **Publicize upcoming SBIR solicitation** at relevant technical and programmatic meetings and conferences. Includes JPL engineering staff and project/mission people encouraging their small business contacts to propose.
- **Publicize SBIR successes**, so that program and project managers can see concrete examples of the benefits.

Infusion

(2/3) What's working in technology infusion?

- Technical Monitors who:
  - Make the small business aware of NASA technology requirements (and changes to these requirements) and effectively **"champions" the technology** to NASA programs and projects.
  - Communicate consistently with the small business and **help it stay on track towards NASA applications**.
  - Develop and maintain **connections to relevant missions, projects, and/or advanced technology programs**.
  - Have specialized knowledge of **how the relevant technology dovetails with NASA-specific mission needs.**
  - Encourage the small business to take a **proactive role** in finding post Phase II funding and customers (see next page).

Infusion

(3/3) What's working in technology infusion?

- Company maintains an up to date prospective for its potential NASA applications, including specific projects, instruments or advanced technology programs - and **confirms** these interests via direct communication and contacts (not just via reading documents or websites).

- **Company is proactive - has a realistic, clearly defined plan** – preferably a written plan - **and mechanism to proceed beyond Phase II**, either via their internal funding, seeking non-SBIR NASA funds, angel investors, venture capital, teaming with a prime or other larger organization, or a combination.

What are some Phase II strategies to increase the odds of follow-on work?

Infusion

- **Tech Monitors and Subtopic Managers are among our most valuable resources to help companies infuse their technology. You provide technical/ programmatic credibility and connections with program and project personnel.**
- Tech Infusion Managers (TIMs) build connections with Center technologists, help plan and implement infusion strategies, help identify applications and funding sources, report successes, keep prospective users informed of available and developing technologies, keep SBIR advocates motivated.
- Integrate SBIR technologies with larger JPL technology development programs as much as possible. In Phase II, for a few hours of your time, you receive, in return, several hundred thousand dollars worth of the company's technology development.
- Keep your line and program management aware about your company's SBIR successes and how their work is directly benefiting JPL.

How does the recent Reauthorization address infusion and commercialization?

Added Support

- On 12/31/2011, the Federal SBIR Program was reauthorized through 9/30/2017 as part of the National Defense Authorization Act for Fiscal Year 2012, H.R.1540; Public Law No. 112-81.
  - This applies to all Federal Agencies required to participate in SBIR/STTR, including NASA.
- **Full text is at the Library of Congress website,** http://thomas.loc.gov/home/thomas.php
  - Search Bill Summary and Status: Select "Bill Number" and input H.R.1540
  - Click on "Text of Legislation"
  - Select the most recent version [H.R.1540.ENR] to download a PDF.
  - **In the PDF, navigate to Division E – SBIR and STTR Reauthorization**
    - Subtitle A – Reauthorization of the SBIR and STTR Programs
    - **Subtitle B – Outreach and Commercialization Initiatives**
    - Subtitle C – Oversight and Evaluation
    - Subtitle D – Policy Directives
    - Subtitle E – Other Provisions
  - **Subtitle B is particularly relevant to infusion and commercialization.**

How are the SBIR and STTR Policy Directives important to infusion and commercialization?

Added Support

- Per the Reauthorization, Subtitle D: The U. S. Small Business Administration (SBA) had 180 days to implement **amended SBIR and STTR Policy Directives** in accordance with the reauthorization legislation.
- **Federal agencies participating in SBIR/STTR must follow the guidance provided by the Policy Directives.**
- The Reauthorization bill includes many program changes and additions.
  - **A number of these are potential new tools for commercialization and infusion**. Some apply only to certain agencies. Some items are mandatory, others are optional. The Policy Directives spell these out.
  - The amended Policy Directives were published in the Federal Register on 8/6/2012. They are available at:

    https://www.federalregister.gov/articles/2012/08/06/2012-18119/small-business-innovation-research-program-policy-directive (SBIR)

    https://www.federalregister.gov/articles/2012/08/06/2012-18120/small-business-technology-transfer-program-policy-directive (STTR)

What is Phase II-E, and which SBIR companies are eligible?

Added Support

- The Phase II Enhancement (II-E) provides **a matching funding option for enhancing Phase II contracts.**
- **Can provide a company with additional Phase II SBIR/STTR funds, and extends length of Phase II contract.**
  - **Up to $125K (for '10 Phase II and earlier),** extends Phase II for up to 4 months.
  - **Up to $250K (for '11 Phase II),** extends Phase II for at least 4 months.
  - **Up to $125K (for '12 Phase II),** extends Phase II for 6-12 months. **But note the new Phase II-X alternative (next page)!**
- **Company must provide 1:1 matching (cost sharing) funds from a non SBIR/STTR source – a NASA project, NASA contractor, or commercial investor** - to advance their technology for further research, infusion, and/or commercialization. Minimum is $25K of cost sharing; there is no upper limit on non SBIR/STTR sources.
- NASA has provided eligible companies with official guidance, including what types of relationships between a small company and outside investors qualify as an investment. Additional guidance is in the NASA SBIR Proposal Solicitation, section 1.4 (Three-Phase Program) and in the companies' Phase II contracts.
  - If you have access to the NASA SBIR/STTR Contract Administration and Closeout Electronic Handbook (EHB), the guidance is also posted there. Or we can e-mail you a copy.

What is Phase II-X, and how is it different from Phase II-E?

Added Support

- The Phase II eXpanded (II-X) option is new, starting with the '12 Phase II contracts. Its purpose is to establish **strong and direct partnerships between NASA's SBIR/STTR Program and other NASA projects** developing new technologies.
  - Company must confirm a non-SBIR/STTR **NASA** program or project as a partner to invest in advancing their technology for further research and development or infusion. **Minimum is $75K** of NASA program or project funds; there is no upper limit.
  - **Phase II-X will then match, on 2:1 basis, up to $250K of NASA program or project funding, with up to $500K of SBIR/STTR award funds.**
  - Extends Phase II for 12-24 months.
- **Bottom line: II-X can provide a company significantly more funds than II-E, as long as co-funding partner is a NASA program or project.**
- Additional guidance is in the NASA SBIR Proposal Solicitation, section 1.4 (Three-Phase Program) and will eventually be in the companies' Phase II contracts.

How does a company qualify for Phase II-E or II-X?

Added Support

- During Phase II, the small business must submit **either a Phase II-E or II-X application (not both!)** via the Contract Administration and Closeout Electronic Handbook (EHB). Submittal time period is specified in advance by NASA HQ.
- Starting with the '12 Phase II contracts (2012 Solicitation):
  - Company will need to provide notice of intent to propose by end of the 13th month of their Phase II. This is new.
  - Submittal window will be during 4th month before end of company's Phase II. This is later in Phase II than in previous years, giving companies additional time to generate hardware or software prototypes and increase probability of securing co-funding.
- '09 Phase II companies were eligible in 2012.
- **'10 Phase II companies will be eligible in 2013. Anticipate call in mid calendar year 2013.**

How are the SBIR Select Subtopics relevant to infusion?

- Pilot program for 7 select SBIR subtopics of particular interest to NASA. This is parallel to, but distinct from, the regular 2012 Solicitation. Publicly available at http://sbir.nasa.gov/SBIR/sbirselect2012/solicitation/index.html
- Exit Technology Readiness Levels (TRLs) and quality of deliverables are expected to be significantly higher for these proposals**. In accord with the higher funding levels, technologies should be well positioned for follow-on opportunities and/or infusion at end of Phase II.**
- Phases II-E and II-X will also apply to 2012 Select Subtopics.

	Regular SBIR	Select SBIR
Phase I maximum contract value	$125K	$200K
Phase I period of performance	6 months	6 months
Phase II maximum contract value	$750K	$1500K
Phase II period of performance	24 months	24 months

Added Support

What are the SBIR Select Subtopics for 2012?

Added Support

- **Human Exploration and Operations Mission Directorate (HEOMD)**
  - E1.01 High Power Electric Propulsion Systems
  - E1.02 Nano/Micro Satellite Launch Vehicle Technology
  - E1.03 International Space Station Utilization
- **Aeronautics Research Mission Directorate (ARMD)**
  - E2.01 Air Traffic Management Research and Development
- **Science Mission Directorate (SMD)**
  - E3.01 Laser Transmitters and Receivers for Targeted Earth Science Measurements
  - E3.02 Advanced Technology Telescope for Balloon Mission
  - E3.03 Extreme Environments Technology

How does NASA post Phase II funding differ from that of other agencies?

Added Support

- NASA's SBIR Program provides funds for Phase I (proof of concept), Phase II (demonstration/reduction to practice) and the Phase II-E and new II-X options (extension of Phase II that increases infusion probability).
- **Anything beyond that ---- needs to get its funds from elsewhere. Post Phase II funds can be NASA or non-NASA, but cannot be provided by SBIR/STTR.**
- Several other SBIR agencies, particularly DoD, NSF and NIH; and especially the Navy, maintain a number of formal, funded post Phase II commercialization, business development, and infusion programs to which SBIR companies can apply.
- NASA has no direct analog of these large "umbrella" programs.

How does NASA make Phase III awards?

Added Support

- **NASA may award follow-on contracts for SBIR and STTR developed products, services, or additional related research and development work without competing the contract. Competition for the Phase I and/or Phase II contract meets the Federal law contract competition requirement. (This is an advantage over other types of post Phase II funding).**
- A Federal agency may enter into a Phase III agreement at any time with a Phase I or Phase II awardee.
- There is no limit on the number, duration, type, or dollar value of Phase III awards made to a business concern.
- There is no limit on the time that may elapse between a Phase I or Phase II and a Phase III award.
- For more information see the NASA SBIR/STTR Proposal Solicitation.
  - The 2012 Solicitation is at
    - http://sbir.nasa.gov/SBIR/sbirsttr2012/solicitation/index.html
  - Or we can e-mail you a copy.
- **If you have a prospective NASA Phase III funding source, contact our SBIR Program Office for information on how to get it implemented.**

Added Support

How does the NASA SBIR Program fit into NASA's Office of the Chief Technologist (OCT) Space Technology Program?

(and why is this important?)

External Drivers in Creation of Space Technology Program

Added Support

- **NASA Authorization Act of 2008**

  http://thomas.loc.gov/cgi-bin/query/z?c110:H.R.6063:

- **NRC report, "A Constrained Space Exploration Technology Program: A Review of NASA's ETDP" (2008)**

  http://www.nap.edu/catalog.php?record_id=12471

- **NRC report, "America's Future in Space: Aligning the Civil Space Program with National Needs" (2009)**

  http://www.nap.edu/catalog.php?record_id=12701

- **NRC report, "Fostering Visions for the Future: A Review of the NASA Institute for Advanced Concepts (2009)**

  http://www.nap.edu/catalog.php?record_id=12702

- **Augustine Committee – Review of U. S. Human Space Flight Plans (2009)**

  http://www.nasa.gov/offices/hsf/meetings/10_22_pressconference.html

- **NRC report, "Capabilities for the Future: An Assessment of NASA Laboratories for Basic Research" (2010)**

  http://books.nap.edu/catalog.php?record_id=12903

Reference: NASA Space Technology Program public website
http://www.nasa.gov/offices/oct/about_us/resources/index.html
Document: Space Technology: Investments in our Future (March 2011)

OCT's Space Technology Program and How SBIR/STTR Fits In

Added Support

- Low TRL
  - Center Innovation Fund
  - Centennial Challenges
  - NASA Innovative Advanced Concepts (NIAC)
  - **SBIR/STTR**
  - Space Technology Research Grants
- Mid TRL
  - Game Changing Development Program
  - Small Spacecraft Technology Program
- Mid to High TRL
  - Technology Demonstration Missions
  - Flight Opportunities

Reference: NASA Space Technology Program public website http://www.nasa.gov/offices/oct/stp/index.html

OCT Space Technology: Low TRL Programs

Added Support

- Center Innovation Fund: Stimulate and encourage creativity and innovation within the NASA Centers in addressing NASA and national technology needs.

  http://www.nasa.gov/offices/oct/stp/innovation_fund/index.html

- Centennial Challenges: Find the most innovative solutions to technical challenges via competition and cooperation; encourage participation of independent teams, individual inventors, student groups, and private companies of all sizes in aerospace R&D.

  http://www.nasa.gov/offices/oct/stp/centennial_challenges/index.html

- NASA Innovative Advanced Concepts (NIAC): Develop visionary ideas that could transform future NASA missions via breakthroughs – radically better or entirely new aerospace concepts.

  http://www.nasa.gov/offices/oct/stp/niac/index.html

- **SBIR/STTR: Opportunity for small, high tech companies and research institutions to participate in Government sponsored research and development (R&D) in key technology areas.**

  http://www.nasa.gov/offices/oct/stp/sbir_sttr/index.html

- Space Technology Research Grants: Accelerate development of "push" technologies to support future space science and exploration needs of NASA, other government agencies and commercial space sector. Includes Space Technology Research Fellowships and Space Technology Research Opportunities.

  http://www.nasa.gov/offices/oct/stp/strg/index.html

Reference: NASA Space Technology Program public website http://www.nasa.gov/offices/oct/stp/index.html

OCT Space Technology: Mid TRL - Game Changing Development (GCD)

Added Support

- Investigate novel ideas and approaches that have the potential to revolutionize future space missions and provide solutions to significant national needs.
  - Identify and rapidly mature innovative, high-impact capabilities and technologies; complement them with new starts and competitively-selected projects.
  - Take technologies from proof of concept through component testing; invest in specific technology areas through component and subsystem testing.
  - GCD work is done primarily in the lab, with ground testing.
  - Successful technologies will transition to higher TRL programs such as Technology Demonstration Missions or directly to flight missions.

http://www.nasa.gov/offices/oct/stp/game_changing_development/index.html

Reference: NASA Space Technology Program public website http://www.nasa.gov/offices/oct/stp/index.html

OCT Space Technology: Mid TRL - Small Spacecraft Technology

Added Support

- Identify and support development of new subsystem technologies to enhance or expand small spacecraft capabilities.
- Support flight demos of new technologies, capabilities and applications for small spacecraft.
- Use small spacecraft as platforms for testing and demonstrating technologies and capabilities that might be applicable to spacecraft and systems of any size.
- Advance subsystem technologies from entry TRL 3 to exit TRL 5.
- Purpose is to develop new technologies and demonstrate new capabilities, but not to perform operational missions with small spacecraft. However, program will work closely with operational flight and science research organizations to identify advanced technology needs and potential new applications.

  http://www.nasa.gov/offices/oct/stp/small_satellite_subsystem_tech/smallsat_tech.html

Reference: NASA Space Technology Program public website http://www.nasa.gov/offices/oct/stp/index.html

OCT Space Technology: Mid to High TRL - Technology Demonstration Missions

Added Support

- Purpose is to mature lab-proven technologies to flight-ready status.
- Give system-level technologies the opportunity to operate in the space environment, where they gain operational heritage and reduce future mission risks.
- Nine Tech Demo missions are in development:
  - Autonomous Landing Hazard Avoidance Technology
  - Cryogenic Propellant Storage and Transfer
  - Deep Space Atomic Clock
  - Human Exploration Telerobotics
  - Laser Communications Relay Demonstration
  - Low-Density Supersonic Decelerator
  - Mars Science Laboratory Entry, Descent and Landing Instrumentation
  - Materials International Space Station Experiment-X
  - Solar Sail Demonstration (Sunjammer Project)

http://www.nasa.gov/mission_pages/tdm/main/index.html

Reference: NASA Space Technology Program public website http://www.nasa.gov/offices/oct/stp/index.html

OCT Space Technology: Mid to High TRL - Flight Opportunities

Added Support

- Facilitate low-cost access to suborbital environments: to advance space technology development and support entrepreneurial commercial space industry.
- Under contract to NASA, providers of commercial suborbital reusable launch vehicles (sRLVs), will support commercial payload integration and suborbital space transportation services, via 3-4 minute periods of microgravity or other selectable levels of low gravity for technology development and related research.
  - Several emerging sRLVs have been competitively selected to fly semi-automated and automated payloads on piloted and robotic flights.
  - Most will be flown from Mojave Air and Spaceport, Mojave, CA; and Spaceport America, near Las Cruces, NM.
- Commercial parabolic flights will test technologies in seconds-long periods of microgravity and at selectable low-gravity levels.
  - Flown from Ellington AFB, Houston, TX.

http://www.nasa.gov/offices/oct/stp/flight_opportunties/index.html

Reference: NASA Space Technology Program public website http://www.nasa.gov/offices/oct/stp/index.html

Crosscutting Space Technology Development – Potential Post Phase II Funding Sources

Added Support

- Candidate technologies should be applicable to:
  - More than one NASA Mission Directorate (MD), or
  - A NASA MD and an external Federal agency, or
  - A NASA MD and a commercial application.
- Technologies applicable exclusively to one NASA MD will probably not be considered unless truly revolutionary.
  - Instead seek follow-on funding from MD-specific sources (more on that later).
- Advancement from low TRL programs into higher TRL programs is not automatic. **One good option is for your company to get onto an appropriate team (or lead a team) that is proposing to a higher TRL program.**
  - Company should use its NASA points of contact, both SBIR and non-SBIR.
  - Company should learn as much as possible about the Space Technology Program and its specific initiatives.

Space Technology Program Funding Opportunities

Added Support

- **Proposals to OCT funding calls must align with major drivers in NASA OCT's Space Technology Roadmaps.**
- A broad range of Space Technology Program competitive solicitations and selections are posted on the NASA OCT home page:
  - http://www.nasa.gov/offices/oct/home/index.html
- They are also posted on NSPIRES (NASA Solicitation and Proposal Integrated Review and Evaluation System). Home page:
  - http://nspires.nasaprs.com/external/
- Register with NSPIRES – See "Getting Started" on the NSPIRES home page – to get on mailing lists for NASA research announcements and to submit proposals.
  - Individuals can register any time.
  - Organizations must have a valid registration with the System for Award Management. See NSPIRES home page for process.

NASA OCT Space Technology Roadmaps

- In 2011, NASA teams, under OCT guidance, developed 14 draft Space Technology Area Roadmaps for review by the National Research Council (NRC), as initial prioritization point for mapping NASA's future technology investments. With technical community input, NRC provided its final recommendation report "NASA Space Technology Roadmaps and Priorities" on 2/1/2012.

Technical Area	Space Technology Roadmaps
TA01	Launch Propulsion Systems (6.2MB)
TA02	In-Space Propulsion Technologies (3.7MB)
TA03	Space Power and Energy Storage (6.2MB)
TA04	Robotics, Tele-Robotics and Autonomous Systems (5MB)
TA05	Communication and Navigation (4.1MB)
TA06	Human Health, Life Support and Habitation Systems (4.9MB)
TA07	Human Exploration Destination Systems (7.8MB)
TA08	Science Instruments, Observatories and Sensor Systems (4MB)
TA09	Entry, Descent and Landing Systems (5.8MB)
TA10	Nanotechnology (10.1MB)
TA11	Modeling, Simulation, Information Technology and Processing (4.7MB)
TA12	Materials, Structures, Mechanical Systems and Manufacturing (9MB)
TA13	Ground and Launch Systems Processing (10.1MB)
TA14	Thermal Management Systems (5.3MB)

References and live links to the roadmaps are publicly available at:
http://www.nasa.gov/offices/oct/home/roadmaps/index.html and http://www.nap.edu/catalog.php?record_id=13354

Added Support

Added Support

What if a technology or application is mission-directorate specific (not crosscutting)?

What are some potential NASA Science Mission Directorate (SMD) post Phase II funding sources?

Added Support

- **Research Opportunities in Space and Earth Sciences (ROSES) NRA**
  - Covers a range of post Phase II TRL levels.
  - Can also pursue ROSES in parallel with an ongoing Phase I or II.
  - See next two pages for detailed opportunities.
- **NASA Pre-project and Project funding**
  - Case-by-case basis. Tech Monitor's project and program office connections are especially important here.

How is the ROSES NRA relevant?

Added Support

- This annual umbrella NASA Research Announcement (NRA) solicits basic and applied research in support of NASA SMD.
- Covers all aspects of basic and applied supporting research and technology in space and Earth sciences. Includes many individual program elements.
- **Awards range from < $100K/yr for focused, limited efforts (e.g., data analysis) to > $1M/yr for extensive activities (e.g., development of science experiment hardware). Typical period of performance is 4 yrs.**
- A program element may select anywhere from a few to several dozen proposals in a given year.
- Organizations of every type: Government and private, for profit and not-for-profit, may submit proposals without restriction on number or teaming arrangements.
- 2012 ROSES NRA, Solicitation NNH12ZDA001N, is at
  - http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={4DF6A47E-EDC1-20F2-11FB-8BDF6890024A}&path=open
- Proposals are due (depending on the specific program element) through 3/22/2013.

What ROSES NRA elements are particularly applicable (in the years in which they're competed)?

Added Support

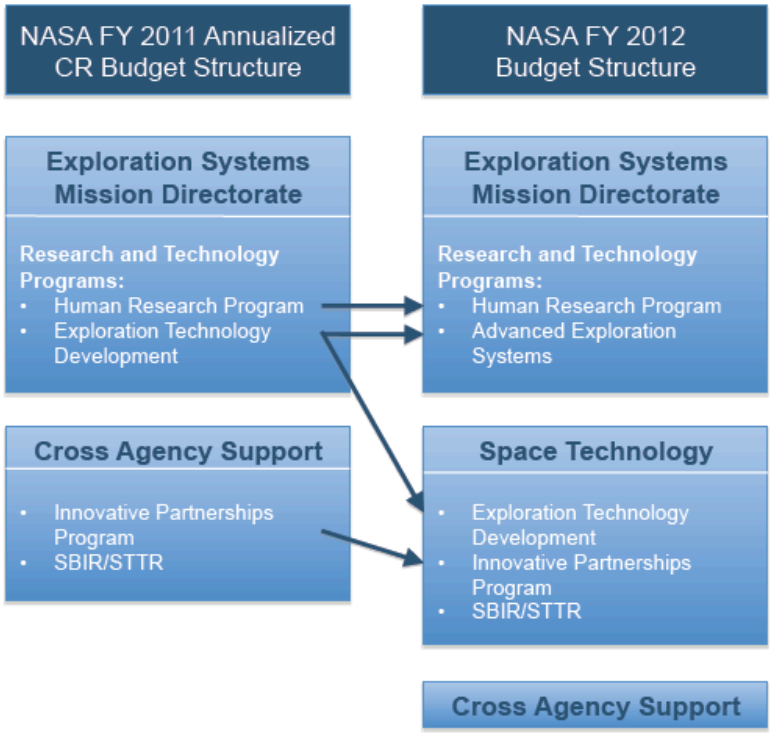
In rough order of increasing TRL:

- Astrophysics Research and Analysis (APRA)
- Mars Fundamental Research
- Lunar Advanced Science and Exploration Research
- Advanced Component Technology (ACT)
- Advanced Information Systems Technology (AIST)
- Mars Technology Project (MTP)
- Planetary Instrument Concepts for the Adancement of Solar System Observations (PICASSO)
- Astrobiology Science and Technology for Exploring Planets (ASTEP)
- Maturation of Instruments for Solar System Exploration (MatISSE)
- Strategic Astrophysics Technology (SAT)
- Instrument Incubator Program (IIP)
- Airborne Instrument Technology Transition (AITT)

Exploration Technology Development (ETD)

Added Support

- At start of FY'12, much of the ETD program moved from the former Exploration Systems Mission Directorate (ESMD) into the Space Technology Program.



Reference: NASA Space Technology Program public website http://www.nasa.gov/offices/oct/about_us/resources/index.html
Document: Space Technology: Investments in our Future (March 2011)

(1/2) What are some potential NASA Human Exploration and Operations Mission Directorate (HEOMD) post Phase II funding sources?

Added Support

- ETD continues to develop long-range, Exploration-specific technologies to enable future human Exploration missions.
  - The Human Exploration and Operations Mission Directorate (HEOMD) is the main customer, focusing both on International Space Station operations, and on human exploration beyond low earth orbit.
  - Currently the program is primarily capability-driven; future specific missions are still being defined.
- **Major program components of the original ETD are now being managed by OCT's Game Changing Development and Technology Demonstration Missions, both of which are potential Post Phase II funding sources.**

(2/2) What are some potential NASA HEOMD post Phase II funding sources?

Added Support

- **Another major driver continues to be SCaN (Space Communications and Navigation).**
- The 2nd SCaN SBIR Commercialization Workshop was held Aug. 25, 2011 at NASA GRC.
  - 2011 Presentations are available at http://www.nasa.gov/offices/ipp/centers/arc/home/scan.html
- **Technology areas of interest include:** Optical Communications; Antenna Arraying Technology – Receive and Transmit; Advanced Antenna Technology; Advanced Networking Technology; Spacecraft RF Transmitter/Receiver Technology; Software Defined Radio; Spacecraft Antenna Technology; Spectrum Efficient Technology; Ka-band Atmospheric Calibration; Position, Navigation, and Timing; Space-Based Range Technology; and Uplink Arraying.
- More information on SCaN is available at

  https://www.spacecomm.nasa.gov/spacecomm/default.cfm

Additional NASA Mission Directorate Resources: Roadmaps, Program Plans, Working Groups, Missions, Decadal Surveys…

- Science (SMD)
  - Earth Science http://nasascience.nasa.gov/earth-science/
  - Planetary Science http://nasascience.nasa.gov/planetary-science/
  - Astrophysics http://nasascience.nasa.gov/astrophysics/
  - Heliophysics http://nasascience.nasa.gov/heliophysics/
- Human Exploration and Operations (HEOMD)
  - http://www.nasa.gov/directorates/heo/home/
- Aeronautics Research (ARMD)
  - http://www.aeronautics.nasa.gov/

- **Companies: Use these resources as a starting point – Always follow up with technical and/or programmatic points of contact.**

Information

Can you elaborate on a recent conference that provided commercialization and business development resources?

Information

- The annual Beyond Phase II Conference showcases DoD SBIR Program's Phase II awardees' technologies and provides a forum for commercialization opportunities. The event brings together current DoD SBIR Phase II companies, key technology and acquisition personnel from government and industry.
  - Although primary focus of this conference is DoD SBIR, much of the material on infusion and commercialization, particularly best practices, applies to other agencies as well.
- **2012 Beyond Phase II Conference presentations are currently publicly available at**

  http://www.cvent.com/events/2012-national-sbir-beyond-phase-ii-conference/custom-19-dd896ffd691342858593e4278dfb57b2.aspx
- Feel free to download any or all (or we can e-mail you copies).

How about some other commercialization and business development resources?

Information

- **National SBIR Conferences, and also Regional SBIR Conferences.**
  - Resources for small companies include:
    - One-on-one meetings with SBIR agencies and prime contractors
    - Array of presentations on methods, strategies, resources and contacts for maximizing SBIR technical, business development, commercialization, infusion, and funding success
    - Informational poster sessions
    - Many networking opportunities
    - Pre-conference short courses
  - Encourage your small business contacts to attend and participate.
  - Presentations from previous Conferences are openly posted on their websites, but not indefinitely. We can e-mail you copies if you're interested.
- **SBIR Gateway** is a broad scope SBIR information site. Includes news items, search services, conference information, assistance services and more.

  http://www.zyn.com/sbir/

National SBIR Portal

- Home page: http://www.sbir.gov This resource includes:
- Extensive database of SBIR awards and solicitations, searchable across all 11 SBIR-participating Agencies.
- SBIR program news
- Calendar of events
- Frequently asked questions
- SBIR success stories

Information

Who at JPL has more information?

SBIR Contacts

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