Potential Source of Funding: Innovative Partnerships Program (IPP)

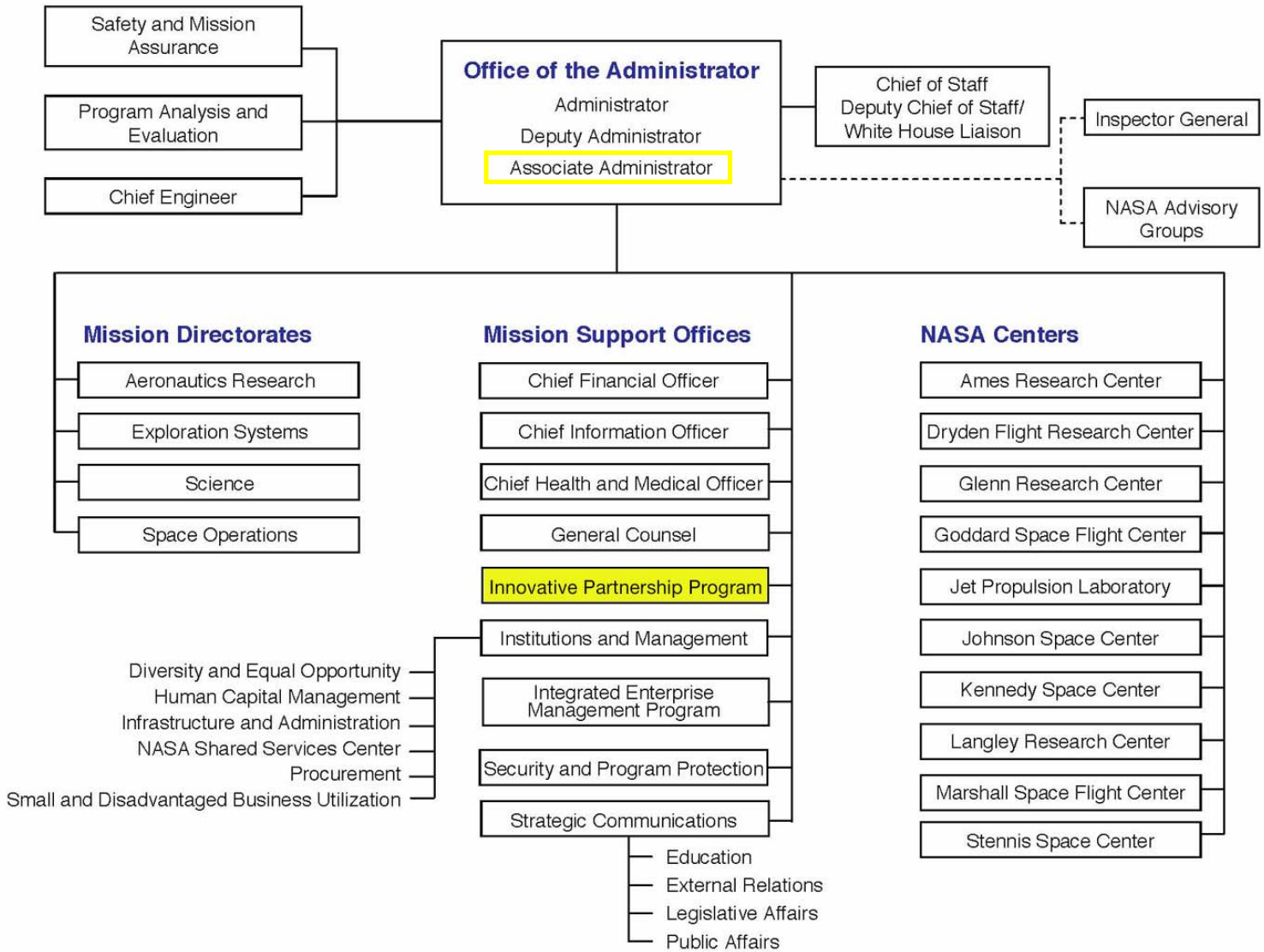
NIAC Fellows Conference

March 7, 2007

Topics

- **What is the Innovative Partnerships Program (IPP)?**
- **What does IPP do?**
- **What are opportunities for funding from IPP?**

Agency Organization



* In accordance with law, the offices of Diversity and Equal Opportunity and Small and Disadvantaged Business Utilization maintain reporting relationships to the Deputy Administrator and Administrator.

FY 2008 Budget Request

Budget Authority (millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Science, Aeronautics and Exploration	**$10,650.6**	**$10,483.1**	**$10,868.4**	**$11,364.1**	**$15,386.5**	**$15,888.6**
Science	**$5,466.8**	**$5,516.1**	**$5,555.3**	**$5,600.6**	**$5,656.9**	**$5,802.7**
Planetary Science	$1,411.2	$1,395.8	$1,676.9	$1,720.3	$1,738.3	$1,748.2
Heliophysics	$1,028.1	$1,057.2	$1,028.4	$1,091.3	$1,241.2	$1,307.5
Astrophysics	$1,563.0	$1,565.8	$1,304.2	$1,268.9	$1,266.2	$1,393.8
Earth Science	$1,464.5	$1,497.3	$1,545.8	$1,520.1	$1,411.2	$1,353.2
Exploration Systems	**$4,152.5**	**$3,923.8**	**$4,312.8**	**$4,757.8**	**$8,725.2**	**$9,076.8**
Constellation Systems	$3,232.5	$3,068.0	$3,451.2	$3,784.9	$7,666.0	$7,993.0
Advanced Capabilities	$920.0	$855.8	$861.6	$973.0	$1,059.1	$1,083.9
Aeronautics Research	**$529.3**	**$554.0**	**$546.7**	**$545.3**	**$549.8**	**$554.7**
Aeronautics Technology	$529.3	$554.0	$546.7	$545.3	$549.8	$554.7
Cross-Agency Support Programs	**$502.0**	**$489.2**	**$453.5**	**$460.4**	**$454.7**	**$454.4**
Education	$167.4	$153.7	$152.8	$152.7	$149.8	$149.6
Advanced Business Systems	$97.4	$103.1	$69.4	$71.6	$67.6	$67.5
Innovative Partnerships Program	$215.1	$198.1	$197.2	$199.8	$200.0	$200.0
Shared Capability Assets Program	$22.1	$34.3	$34.2	$36.2	$37.3	$37.2
Exploration Capabilities	**$6,108.3**	**$6,791.7**	**$6,710.3**	**$6,625.7**	**$3,036.6**	**$2,978.0**
Space Operations	**$6,108.3**	**$6,791.7**	**$6,710.3**	**$6,625.7**	**$3,036.6**	**$2,978.0**
Space Shuttle	$4,017.6	$4,007.5	$3,650.9	$3,634.4	$116.2	$0.0
International Space Station	$1,762.6	$2,238.6	$2,515.1	$2,609.2	$2,547.5	$2,600.8
Space and Flight Support (SFS)	$328.1	$545.7	$544.3	$382.0	$372.9	$377.2
Inspector General	**$33.5**	**$34.6**	**$35.5**	**$36.4**	**$37.3**	**$38.3**
Inspector General	**$33.5**	**$34.6**	**$35.5**	**$36.4**	**$37.3**	**$38.3**
NASA FY 2008	**$16,792.3**	**$17,309.4**	**$17,614.2**	**$18,026.3**	**$18,460.4**	**$18,905.0**
Year to year increase		*3.1%*	*1.8%*	*2.3%*	*2.4%*	*2.4%*

***All fiscal year budgets shown are Full Cost Simplified**

Innovative Partnerships Program Elements

Technology Infusion

- SBIR
- STTR
- IPP Seed Fund

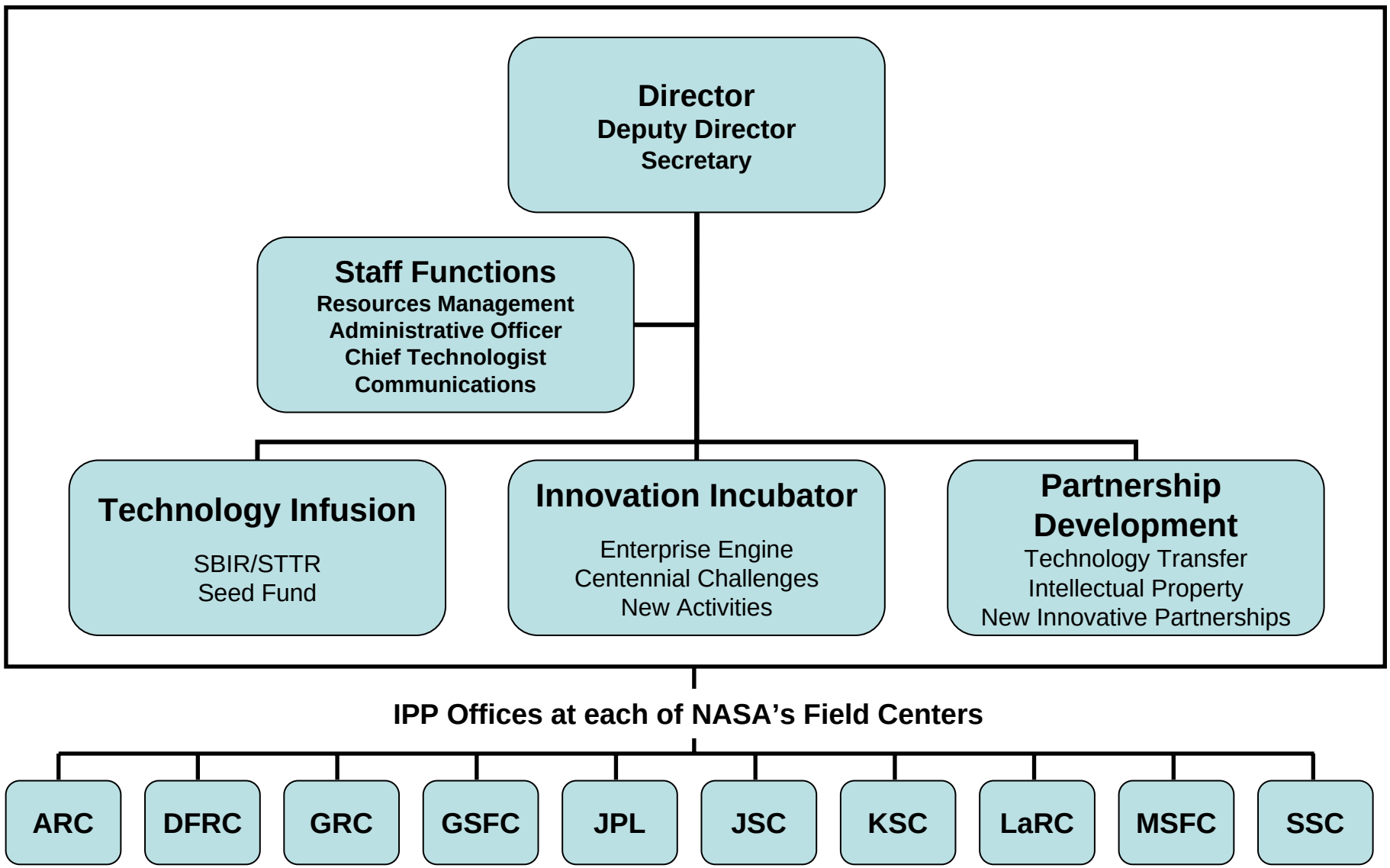
Innovation Incubator

- Centennial Challenges
- Facilitate purchase of services from the emerging commercial space sector

Partnership Development

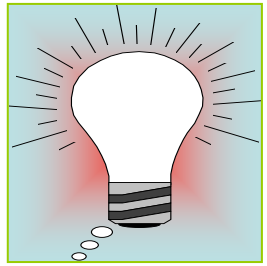
- Intellectual Property management
- Technology Transfer
- New Innovative Partnerships

Innovative Partnerships Program Office

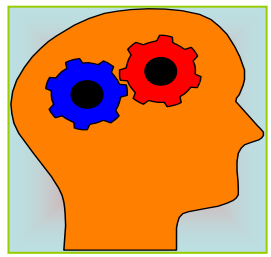


SBIR/STTR: 3-Phase Program

- **PHASE I**
  - Feasibility study
  - $100K award
  - 6 months duration (SBIR)
  - 12 months duration (STTR)



- **PHASE II**
  - Technology Development
  - 2-Year Award
  - $750K (SBIR/STTR)



- **PHASE III**
  - Technology Infusion/Commercialization Stage
  - Use of non-SBIR Funds
  - Ability to award sole-source contracts without JOFOC based on specific SBIR authority – NASA and NASA primes

SBIR Programmatic Profile

	FY02	FY03	FY05	FY06*	FY07**
Millions of $	107.3	107.5	110.0	105.6	101.6
Phase 1 Awards	312	291	297	260	
Phase 2 Awards	155	139	142	130	

* FY06 program Budget Awarded in FY07 (September 06)
** FY07 President's Budget Request

STTR Programmatic Profile

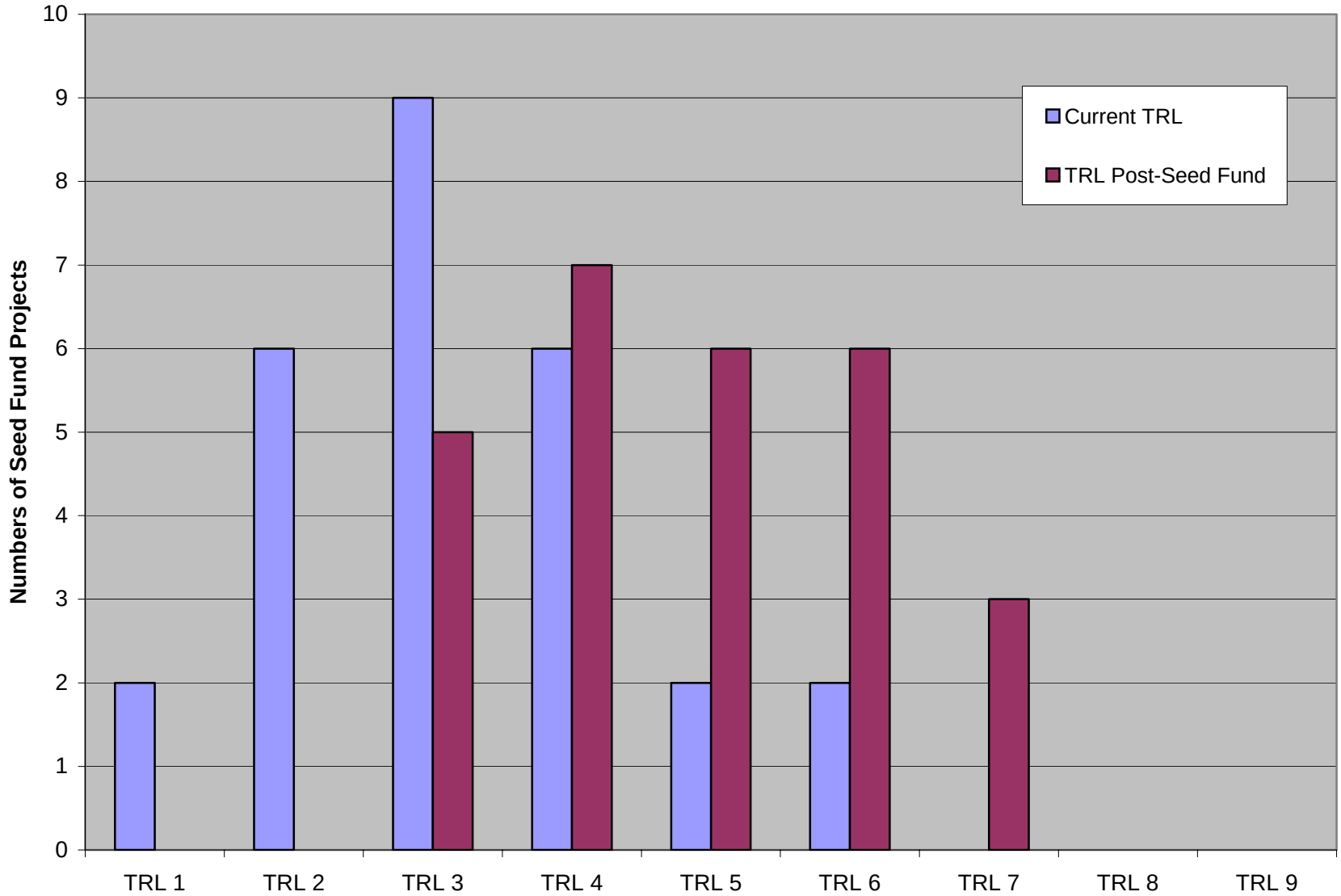
	FY03	FY04	FY05	*FY06	**FY07
Millions of $	6.4	12.9	13.2	12.7	12.2
Phase 1 Awards	45	40	35	27	
Phase 2 Awards	18	26	17	14	

* FY06 Budgeted Awards actually made in FY07 (September 06)
** FY07 President's Budget Request

IPP Seed Fund

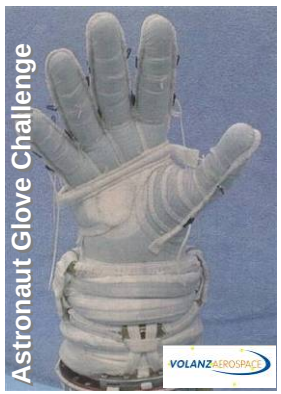
- **The IPP Seed Fund enhances NASA's ability to meet Mission capability goals by providing leveraged funding to address technology barriers via cost-shared, joint-development partnerships.**
- **All Seed Fund proposals, to be executed over a period of one year, were developed through the collaboration of three principal partners:**
  - a Partnership Manager (Center IPPO);
  - a Co-Principal Investigator (NASA Program or Project Office); and
  - an External Co-Principal Investigator (Private Sector, Academia, Government Lab).
- **There were three principal criteria for selection:**
  - relevance and value to NASA Mission Directorates,
  - scientific/technical merit and feasibility, and
  - leveraging of resources.
- **The FY 2006 Seed Fund effort created 29 partnerships and leveraged IPP resources by better than 4:1 with additional funds inside and outside NASA.**
  - $6.6 million of IPP Office funds,
  - $7.5 million came from Program, Project, Center funds, and
  - $14.2 million came from External Partner funds.

Seed Fund TRL Advancement



CC Competitions in 2007

Competition	Purses	Comp. Date
Astronaut Glove	$250K	April ’07
Regolith Excavation	$250K	12 May ’07
Personal Air Vehicle	$250K	4-12 August ’07
Beam Power	$500K	October ‘07
Tether	$500K	October ’07
Lunar Lander	$2M	October ’07
MoonROx (possible)	$250K	Exp. June ’08



Commercial Space

- **One of NASA's six agency-level goals is to encourage appropriate partnerships with the emerging commercial space sector.**
- **The Innovative Partnerships Program (IPP) plays an important role – as both facilitator and catalyst – towards achieving that NASA goal.**
- **IPP has been tasked to fulfill the role of being a single point of entry into NASA, for outside organizations seeking to partner with or provide services to NASA related to commercial space.**
  - In this role, IPP will be a facilitator, seeking to connect outside capabilities and interests with internal needs and interests at HQ and the Centers – the goal is to make it easier for outside organizations to partner and work with NASA.
- **IPP has also been tasked to demonstrate the purchase of services from the emerging commercial space sector – for parabolic aircraft flight and suborbital flight – with those services to be used for microgravity research, technology development and training.**
  - IPP will offer funds and seek leveraging through partnerships, to provide Facilitated Access to the Space environment for Technology development and training (FAST).
  - IPP is working with NASA's Shared Capability Assets Program (SCAP) and the Glenn Research Center (GRC), who are preparing a solicitation to establish a contract for parabolic aircraft services.
  - IPP will use this contractual mechanism to help demonstrate the business model for purchasing services to support NASA's research and technology needs.

GPS Technology Transfer and Industry Partnership Sample of Return on Investment at JPL

NASA Seed Investment

- **GPS science receiver**
  1990's: ~$0.5M/year for developing BlackJack receiver

- **Real-Time GIPSY (RTG) software**
  Mid 90's: ~$0.5M total for software development

- **Global Differential GPS (GDGPS) System**
  2000-2002: $500K/year for a prototype

Tech Transfer/ Investment from Outside NASA

Technology transfer to industry enabled low-cost, COTS receiver. Investment by industry ~$10M

1995-2000: $0.5M/year from FAA to mature RTG, support WAAS.

2001-present: ~$8M from industry and DoD for operational GDGPS System.
Investment by Industry outside JPL in GDGPS-related infrastructure and services: ~ $20M

Broad Benefits to NASA

Industry provides BlackJack-based science receivers to Jason, ICESat,OSTM, COSMIC

RTG is NASA Software of the Year 2000; RTG powers GDGPS

- Real time sea height from Jason-1
- Free global access to GDGPS corrections through Inmarsat ($1M/year value)
- Real time airplane positioning enables UAV-SAR mission
- TDRSS Augmentation Service for Satellites (TASS) enabled
- Real-time atmospheric sensing from COSMIC constellation

Partnership highlights:

Non-NASA funding,1996 - 2006: ~$20M

Software royalties, 1996 - 2006: ~$5M;

Awards: Space Technology Hall of Fame, 2003

Y. Bar-Sever, S. Lichten JPL. January 2007

Conclusion

- **IPP provides benefits to NASA's programs and projects in many ways including direct funding for technology development and joint-development partnerships.**
- **IPP is working closely with all Mission Directorates to identify priority needs across the agency, to help in shaping our portfolio of investments and partnership opportunities.**
- **IPP Website**
  - http://www.ipp.nasa.gov/

- **Seed Fund call anticipated in April.**
  - Must partner with a NASA field center.
- **SBIR/STTR call anticipated in July.**
- **Centennial Challenge – 7 competitions throughout year.**
- **FAST call anticipated.**

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